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IOHANNIS WYCLIF

TRACTATUS
DE LOGICA.

NOW FIRST EDITED FROM THE VIENNA AND PRAGUE MSS.

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BY

MICHAEL HENRY DZIEWICKI.

VOL. III.

✓
Wyclif Soc. Tracts.

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INTRODUCTION.

I. Preliminary Remarks.

With the third volume of *Logica*, Wyclif's first great philosophical work comes to a close. All that should be said as regards the genuineness of the work and its date has already been said in the Introduction to Vol. I, and there is no need to repeat it here. As to the state of the manuscript, a few words may perhaps be allowed. Very illegible from the beginning, as stated in the Introductions to Vols. I and II, it becomes worse and worse, sometimes intolerably so, as it approaches the end. This may account for, and to some extent excuse, the numerous shortcomings of the present edition, which no one can regret more than the editor himself.

I wish to take this opportunity of again most sincerely thanking all those who have aided me in the work; especially Dr. Furnivall, the Founder of the Wyclif Society; and Mr. Matthew, whose notes have more than once been of great service.

The two chapters of Wyclif's book which make up the present volume were also copied as separate tractates. The last chapter, however, dealing with time, is quite distinct from the treatise *De Individuatione Temporis*, not yet published. Before entering into a detailed examination of the contents of these two chapters, I think it advisable to notice several matters of importance which may strike the reader on a perusal of the whole.

II. A General View.

It is useless to deny that in many respects this third volume of *Logica* will be found unattractive, especially by such as have not made

a study of works of the kind. The wild boldness of the conclusions reached, the impossibility of conceiving what Wyclif himself declares over and over again to be beyond the scope of mathematical speculation, although it deals with Space and Time; above all, the strangeness of Wyclif's standpoint, so foreign to all our modern ideas of Natural Philosophy — will often, no doubt, confuse the reader, and lead him to pass over unnoticed the many excellent qualities, both of subtlety and of depth of thought, with which this volume abounds. I myself, though long engaged in the preparation of this edition, thought at first that the two tractates on Space and Time were merely side-issues that might have been lopped off from Wyclif's philosophy without disadvantage to the whole. But on further consideration my opinion has been very much modified. His theory of Time and Space appears to me now as a logical result, partly of his Realism, partly of his doctrine concerning *maxima* and *minima*; and this same theory is, I think, the root from which his doctrines on the Eucharist necessarily sprang. It is thus essentially linked with his fundamental doctrines; but it is at the same time a link, indissolubly connecting them with the further developments of his theological ideas.

When Wyclif affirmed the objective reality of all universals, he at once encountered a considerable difficulty in dealing with the phenomenon of extension. Nominalists, if consistent, say that not only points, but lines, surfaces, and even volumes, are all *entia rationis* — mere figments of our mind. For a volume is a Universal — One in Many — containing an infinite multitude of surfaces; a surface, again, is the universal of the line; and the line is in like manner the universal of the point. And for the same reason that they denied this reality, Wyclif was obliged to maintain it. As to points, they must be real things too, though not universal, since the line is nothing more than a series of points, and is made up of them: at all events, being something in that which is real, they must be real too. Now, as we have seen in the two former volumes, Wyclif abjures the doctrine of the indefinitely great, and roundly asserts that there is a maximum and a minimum for all things. A maximum of size: therefore space is not absolutely infinite, but only relatively so — relatively *to us*. There is also a minimum of size, which of course is the point. Now, what are those real countless points, which fill all space, and of which all space consists? They are surely not

spiritual. But, if material, how can material substance coëxist in the same space as they? We have to explain how the world fills space, which is already filled by these punctal realities.

The answer, however bold it may seem, is but the outcome of the difficulty just stated, working in Wyclif's mind, already imbued with the doctrines I have mentioned above. Matter is made up of atoms, each atom consisting of a number of points, really distinct from one another, really without length, breadth, or thickness, and yet really touching each other. One point cannot make length; two begin to make it; their essence is to have position of their own, and so, though they touch, they do not coïncide. This non-coïncidence is the beginning of length. Two points do not make a surface, but three do (inchoatively) if the third is not in a line with the other two; and this is the beginning of the plane, and indeed of all surfaces whatsoever. A fourth point not in the same plane as the other three would be the beginning of volume. Such are the primordial atoms, which correspond to every point and in fact *are* every point in space, for no vacuum is possible. And, were there any real difference between the reality of mathematical and that of material points, they would clash together. In short, mathematical points are real and material; therefore, there can be no others. Co-penetration, Wyclif asserts, is an absolute impossibility.

If then a vacuum is inconceivable, and space is the same thing as matter, it follows that, beyond the circumference by which our universe is bounded, there is no space at all, and that the conception of a straight line, indefinitely producible, is but a contradiction in terms. The world being the greatest amount of matter possible, nothing greater can exist; nor can its size be diminished, for then it would no longer be the greatest possible.

Here we come to the point where this development of Wyclif's Realistic doctrines comes in contact — if not in conflict — with the dogma of Transubstantiation. If the size of the universe cannot be diminished, is the annihilation of any part of it admissible? Certainly not. Besides, to each of those points of which the universe consists, it is essential to have position somewhere; to annihilate one single point would be to take away, not only its existence, but its very essence too; or in less Scholastic terminology, it is as impossible to annihilate any portion of matter as to think away a part of space, which, when once

created, is absolutely necessary. A further proof is in the impossibility of a vacuum: if a piece of bread be annihilated, what remains in its place? Nothing thinkable; and, therefore, annihilation is unthinkable too.

Wyclif is thus forced to deny that anything can be annihilated, even by Almighty Power, *even absolutely considered*; and here we see the profound difference which separates him from the general opinion of Scholastic philosophers and theologians, who distinguish between what is possible to Omnipotence, irrespectively of God's other attributes, but are not all of one mind as to whether annihilation is absolutely impossible. They would willingly grant the truth of Milton's lines in the second book of *Paradise Lost*:

. . . . How He can

Is doubtful; that He never will, is sure.

But Wyclif has no doubt at all on the matter.

Now, in the doctrine of Transubstantiation, it is affirmed that the bread *ceases to exist*. This (though some Doctors of great note, Aquinas amongst others, explain it in a different manner) certainly seems to point to annihilation, as was very probably admitted by Wyclif's Nominalistic opponents. At any rate, the assertion that the whole substance of the bread ceases to exist at a given instant — both as to its substantial qualities and the underlying substratum of those qualities — could, in Wyclif's system, be understood only as the annihilation of the atoms of which it consists. This had to be denied. The bread, it was affirmed, ceased to exist *as bread*; in its place there remained a body that Wyclif (no doubt out of respect for the dogma which he still seemed to admit) called a *corpus mathematicum*. I say, 'still seemed to admit'; for, as we have seen, this *corpus mathematicum*, quite orthodox enough in the ordinary sense of the words, is nothing else but the atoms, or mathematical points, of which the bread consists, just as they were before. Any one who will read p. 137 of the present volume will, I think, be convinced that the successive stages of Wyclif's opinions in this matter, as given by Wodeford (see *De Benedicta Incarnacione*, ed. Mr. Harris, *Int.* IX.) were successive only in the mode of expression, not in the thing itself. The same *esse*, he says, which was previously that of bread, becomes sacramentally the Body of Christ. True, he also says that it does not remain bread after consecration, and explains himself no further; but the indestructibility of the bread-atoms has already been

posited. They are the subject of the accidental qualities which we perceive; and though Wyclif calls them a *corpus mathematicum*, they are real objective existences, and not the atoms of Christ's Body. That Body, as I pointed out in the Introduction to *De Apostasia*, is present there as a symbol — and is therefore really present with the reality of a symbol — but not otherwise. Is not this in substance the very same theory that Wyclif expounds in his later works? There is indeed a complete change of language and style, though even so late as in the tractate *De Apostasia*, he continues to employ the term transubstantiation; but here, even from the very outset, he refuses to admit that anything in the physical substance of the bread has been changed.

Such are the most important points in this third volume of *Logica*; their bearing both upon what preceded them and what followed, justifies me, I think, in setting them before the reader in connected form. Here and there, we also find certain other allusions, paragraphs upon necessity and free-will, a word or two against the abuse of ceremonies and the excess of riches in the Church, and other signs which show what was already fermenting in Wyclif's mind; but they are mere side-issues, and not (so far as I can see now) essentially connected with his system. They will, therefore, be more advantageously considered in their place, as we go on to the detailed examination of the two last chapters of Wyclif's *Logica*.

III. Analysis of the Work.

a) Chapter IX.

Short Summary of the Contents.

Local propositions (p. 1—11). *Movement defined and divided* (p. 11—27). — *Other divisions of movement* (27—30). — *Is the Continuous made up of points? Arguments pro* (30—35). — *Arguments contra, drawn from Aristotle's authority* (35—38); *from geometry* (38—63); *from physical science* (63—70); *from theology* (70—74); *and from the fact of chemical combination* (74—85). — *What is the measure of the velocity of motion? Wyclif's opinion* (85—87). — *General arguments contra* (87—100). — *Astronomical objections* (100—111). — *Of Augmentation* (111—116). — *Difficulties* (116—118). — *Of Alteration* (118—121). — *Objections refuted* (121—132).

Local propositions. Place may be taken to mean merely position (1). The world consists of atoms, cannot be increased nor diminished in size, nor moved, nor changed in shape. The whole of space is the whole world; partial spaces are made up of points. To each point corresponds a place, which is fixed, whereas the points are all movable, and may enter it, one after the other (1, 2). It is a mere relation of distance from the poles and the centre of the world (3). The universe is the common place of everything; yet each of its parts has its own partial site (3, 4). Two bodies may thus be in the same place in one sense, and in another, in quite different and separate places (5). Site and situation are not identical, except at the poles and at the centre (6). Position depends upon the distance of anything from the centre (6, 7). Animals, like the world, have in themselves these differences of position: above, below, back, front, right and left (7—11).

Movement defined and divided. Movement is the 'form', or perfection, by which the mobility of a mobile becomes actualized; local movement is but one of its many divisions (11). Local movement implies a mover which is other than the thing moved; this leads us to admit a First Motor, motionless, indivisible, everlasting (12, 13). Local movement may be straight, circular, &c. (14, 15). Can we say that the same body has two different movements at once (16—18)? Not according to strict logic; but one movement may be considered as the combination of two others, and rest, as the result of two equal and contrary motions (18—23). Every change which makes a body to differ from what it was, deserves to be called movement in a wide sense; and in a sense still wider, the activity of the intellect and the action of God upon His creatures, is movement (24). The swiftness of the movement of a body is represented by the space it would pass through in a given time, if not prevented. The impediment only counteracts the external effects which movement tends to cause, and therefore must count for nothing, even when so great as totally to destroy the effect (25). Supposing the sun to have a retrograde movement on the celestial sphere as rapid as the forward motion of the sphere itself, there would be no apparent motion of the sun from east to west, though it would move from north to south (26). Wyclif here alludes to the fact that the sun is higher in the sky in summer than in winter. The effect of which he speaks would be produced, in the language of modern astronomy, if the earth, whilst

continuing to revolve round the sun, ceased to rotate on its axis. The sun would be for ever in the same meridian; but in summer it would be seen higher in the sky — that is, nearer the North Pole; — in autumn, it would go lower — that is, nearer the South Pole — until it disappeared beneath the horizon for six months. This supposition aids Wyclif to explain the sun's yearly apparent passage through the signs of the zodiac, by imagining an eastward movement, which in some unknown manner is delayed to the extent of about one degree every day; while the sun's position in the sky changes at the same time from North to South, or vice versa.

Other divisions of movement. Wyclif here deals only with local movement, uniform or varied; and if varied, varied either in itself or in its subject. If the world revolves with a movement that seems uniform, each part of the world turns round with a different degree of rapidity, except at the poles, where the movement is *nil*. All these various rapidities of movement may at once be predicated of their one subject — the world. It thus at the same time moves faster and slower than itself: which of course, with the above explanation, is evidently true. Wyclif goes farther, and asserts that the motion of a part may be equal to, though less than, that of the whole; notwithstanding that this admission lends a handle to sophistical objections. A movement smaller in velocity¹ is equal to the whole movement in duration. The circular movement of a part of the world near the poles is much less rapid than at the Equator; yet both take place in 24 hours (28). Movement is again either uniformly or variably varied; and once more the old mediaeval distinction

¹ *In velocity.* The assertion that a part of any movement is equal to the whole is explained in the text by the distinction: *quoad molem* — *quoad duracionem*. I find it difficult to understand. The sense, as I give it above, does not, I confess, agree well with *quoad molem*; it ought to be *quoad velocitatem*. But we might understand the words thus: Movement in one atom only (a part of the whole movement *quoad molem*) is equal to the movement of the whole body moved. But then, why does Wyclif use the words *quoad duracionem*? They ought again in this case to be changed for *quoad velocitatem*. I think that the explanation, as given above, answers better to the general drift of the argument. Either way, we see how may be maintained that a partial movement is equal to its whole. — I may here, by the way, repeat what I pointed out in the Introduction to Logica, Vol. II, viz. that I in this analysis often introduce comparisons or remarks of my own, in order to clear up what is not clear, or to reconcile seeming discrepancies.

of movement 'varied in the subject' comes in. Movement variably varied may be so in infinite manners, and endless new species of movement are thus conceivable. At this stage of the enquiry, Wyclif proposes three questions; the first, dealing with succession, is to be solved in the following chapter; the second concerns the Continuous, and the third, the measure of velocity of motion, and will be answered here (29, 30).

Is the Continuous made up of points? Arguments pro. — If the world consists of atoms which in their turn consist of indivisible points,¹ how can we explain the existence of the Continuous, which is indefinitely divisible? How can the Extended be made up of elements which are in no wise extended? But Wyclif says that it must be so, and gives seven arguments to prove it. — 1. The intrinsic cause of anything is necessarily a part of that thing; now points *cause* lines, lines surfaces, and surfaces volumes; thus points are parts of space, and it is ultimately composed of them. — 2. Either points are not, or they are, parts of lines; if not, all the points in a line could be taken away without shortening it: a manifest absurdity. — 3. If two bodies touch in one point only, we have two points which touch one another, and yet are distinct (as belonging to different bodies); that is, they are not in the same place. So we see that 'to touch' does not mean 'to coincide', and the possibility of space consisting of contiguous points is saved (30, 31). — 4. An instant is to divisible continuous time what a point is to a divisible continuous line; but one instant is not identical with the next immediately following it: consequently, neither is one point identical with another that it touches. And if so, the point is, not the negation, but the element of the Continuous (31). — 5. A mobile, passing through two surfaces that touch — air, v. g. and water — will pass one *after* the other, and touch each of them at two indivisible instants of time, distinct, though not separated by any interval. Other suppositions lead

¹ Boskowitch's theory of indivisible points — mere mathematical centres of attraction — which is well-known to the philosophical world, would seem somewhat similar to that of Wyclif. But there is an enormous difference. Boskowitch's atoms *do not touch*, they cannot touch; they act upon each other with attractive and repellent forces through a perfect vacuum. Thus his theory, though lying open to other objections, cannot be assailed by those which Wyclif here undertakes to refute.

to the same conclusion (32). — 6. There are days and nights but one instant long (as at the poles). These days and nights are part of the continuity of time, and yet are distinct from the rest of it; therefore they are real parts, which make up that continuity. And if Time is thus composed, it is easy to show that space is composed likewise (33). — 7. If God, by His almighty Power, created a series of substances each the size of a mathematical point, and placed them side by side throughout the whole of space, we should have continuous extension; and nothing can be brought to prove that what is possible in this case is not a really existing fact (34). — Throughout the whole of these arguments, our author seems at times to take the idea of the absolutely inextended point — the Nothing of Space — and at others, that of a line divided by “a quantity that has increased beyond all measure”. The latter, according to modern mathematicians, is not absolutely without length; only its length is shorter than the shortest line conceivable. Such infinitesimal magnitudes would indeed be factors of the line; but would they agree with Wyclif’s conception of the point, as an absolute minimum of bulk?

The line A, divided by ∞ , gives $\frac{A}{\infty}$; but 2 A, divided in like manner, gives $\frac{2A}{\infty}$; the second quantity is mathematically double of the first. But I leave these considerations to such as are versed in a science which, since five hundred years, has made such progress as Wyclif never dreamed of.

Arguments contra: Aristotle’s view. — The difficulties which surround such a system are of course great and manifold. Aristotle seems against it; for instance, when he says that the Continuous is infinitely divisible. But, *a*) Aristotle speaks of that which is continuous to our senses; and that, so far as our senses can tell, is indeed made up of innumerable parts. But though infinite for us, they are not so to God. And, *b*) Aristotle distinctly says that the point is the cause of the line; if so, it must be its element, and this *dictum* is quite in Wyclif’s favour (35). The doctrine of indivisible points transcends both our senses and our imagination. Geometry has nothing to do here, these points are beyond geometry; physics are out of court, they belong to metaphysic. God alone knows how many points go to form a given square, but their number is not infinite to Him (36). The word ‘Infinite’ is used to denote

all that goes beyond our power of conception, even though the thing be not infinite in itself. A number, therefore, which is infinite to one man will be finite to another; and none is infinite to Divine Intelligence. This evidently flows from Wyclif's conception of *maxima* and *minima*. There is a fixed number of all things — even of the points in a line — which, infinite to us, is finite to God; and no straight line can be infinitely long (37, 38).

As this conception of the Infinite may give rise to the inquiry how far our author is in agreement with the majority of Scholastic philosophers, a short digression is not out of place here, and I shall proceed briefly to state the points on which there is the least contradiction among Schoolmen in this matter.

The Infinite means 'that beyond which nothing greater can be conceived', whether by human thought, or by any other intelligence, however perfect. If no substance or being can be conceived greater, it is the Absolute Infinite — God; if no accident, then it is the relative Infinite — of quantity (multitude or magnitude) or of quality. The Infinite cannot be made up of finite parts; it is not the mere negation, but the negation of a negation, and thus has a positive meaning. Infinite magnitude of matter is impossible; so is an infinite number, an infinite multitude, and a movement infinitely swift. Infinite imperfection or *badness* is also inadmissible; for it would totally destroy any substance in which it inhered; but qualities that denote nothing but perfection, such as force, life, duration, &c. must be admitted in God; in the human soul too, but only from a certain point of view, "secundum quid". This Infinite "secundum quid" is in general predicated of that which is finite in every sense but one; as, e. g., the two halves of an infinite line, or of infinite space. In this sense, and *from the point of view from which it is finite*, one infinite may be greater than another. — Clearly the term, as employed by Wyclif, has quite another meaning, unless when he applies it to God.

Objections based upon geometry. — If Wyclif's theory be true, then the number of points is the same in two lines, one of which is double of the other. For two mobiles, passing over each of them, one double as fast as the other, correspondingly to the length of the lines, will go over them in the same number of instants, and therefore that same number of points will be passed in that time. The difficulty is solved

by denying that at each instant of *any* movement one point is passed over; it is the case only for the swiftest movement possible, that of the 'equinoctial point' in the sky (38, 39). — It is true that such an answer does away with all really continuous motion, except for the said point: during any slower movement from A to B, the mobile C would be at rest in a multitude of points; and thus rest would be identical with movement. But movement may appear to be continuous, though it is not really so; a succession of very short motions, interspersed with rests, will give us the feeling of continuity. As a fact, our senses often mislead us; as, for instance, in certain phenomena of sight, and in the vibrations of which sound consists. If the most rapid possible movement is at the rate of one point per instant, it follows that the world cannot be larger than it is; for if larger, it would revolve more rapidly, and that is impossible: a confirmation of what has been proved elsewhere and otherwise (39, 42). — "But if the apices of several pyramids touched, they would be *in the same place*, and thus coincide." This is merely begging the question. If a point has position of its own, it cannot be in the same place with another. — It is said that in Wyclif's system each point must touch an infinity of others; which leads to difficulties. But this is denied. Six points only touch a seventh placed in their midst. Thus in certain directions one cannot go immediately from one point to the next; their position follows certain fixed rules, somewhat like the grain in wood, or the lines of cleavage in crystals. A line drawn from one point to another which it cannot touch directly, only by means of a third, is nevertheless not bent; for it is as straight as a line can possibly be. To say, the point A touches B, and B, C; therefore, A touches C, is a sophism. All this is indeed unimaginable; but we must go beyond imagination when we have to deal with the *Inextended*. And at any rate, Nominalists have no right to argue at all in the matter (42—46).

Here Wyclif enters into a series of explanations on the different senses given to the words *point*, *line*, *surface* and *angle*, and he expounds what he conceives to be Euclid's meaning. An angle may mean either its apex, or the space which it encloses; two very different things (46—49). But the adversaries point out that either an angle is indefinitely great; which Wyclif denies, affirming that any angle is complete in its apex (49, 50); or that any number of angles, small and great, may coëxist at the same point; which is granted as a harmless

conclusion (50, 51); and that our author's system would imply the denial, not only of Euclid's definition of angles, but of the whole of his treatise on the subject. (Here, by the way, we may note how quietly the trisection of an angle is taken for granted "*secundum doctrinam prime Vitulonis*", i. e. Vitellio, the famous Mediaeval mathematician and optician "*que docet angulum rectum datum in tres partes dividere*", whereas all mathematicians are at present agreed that such trisection is impossible. As, however, I have not been able to get a sight of Vitellio's works, though living in the very city in which he wrote them,¹ I am not quite sure that what he teaches is anything more than a mere practical way of dividing an angle into three parts, without any claim to absolute exactitude.)

Wyclif replies that, as regards Euclid's definition of the angle — the meeting of two lines — this is merely a genetic, not an essential definition. Euclid indeed says what causes an angle; but that is not the angle itself. As to the rest, the answer is ready: Euclid's theory concerns only sensible angles, not such as are found amongst points which touch; such, for instance, as form triangles which have sides only two points long, and of which the apex is an angle which cannot be bisected, &c. — All this cannot be imagined, and should, therefore, be denied from a merely geometrical point of view (52, 53).

We come now to what is perhaps the strongest mathematical objection to Wyclif's system. According to him, points are placed as follows, in a small square of say, 25 points only; I have added the connecting hyphens in the subjoined figure to show which points touch,



which do not touch. As is seen, the points on the diagonals do not touch directly, and there are no more points on the diagonal than on the side of a square. This, true for the given square, all but infinitesimally small, will also be true for all greater ones; and thus the diagonal of any square (containing an equal number of points) will be equal to its side, the greater to the less: which is absurd (53, 54). — Wyclif's reply admits as an evident fact that the diagonal of a square is longer than its side. But when he comes to the statement that parallel lines,

¹ I asked for a copy of Vitellio's works at the Jagellonian Library, Cracow, but was informed that they had been lent to a gentleman who lived a good distance away.

drawn from the sides and perpendicularly to them, touch the diagonal at only one point, he denies it. If it were so, the diagonal would be only as long as the side. Each parallel intersects the diagonal *at several points*; and this accounts for the greater length of the latter line. It is absurd to suppose that two lines which intersect at a very acute angle do not touch by more points than when they are perpendicular; or that these parallels would no longer be straight after intersection: the touching in several points does not change their direction. This somewhat risky answer is supported by the assertion that the ultimate squares (consisting of two points each) are beyond the scope of geometry; also by some remarks concerning the position of points relatively to the poles of the world (55, 56), which I, not clearly seeing their relevancy to the subject, prefer to pass over. But I think it is at this part of the book that we get nearest to the weak point in Wyclif's system: viz. that two points which touch, i. e. which are at *no* distance from each other, are yet *not in the same place*. I at least can find, even in thought, no distinction between *distance* and *difference of place*.

Wyclif comes to the conclusion that God alone knows what the real proportion of the diagonal of a square to its side is; for it depends on the number of points touched by all the intersecting lines parallel to that side. Geometry may perhaps be true only hypothetically; it can prove that the proportion $\sqrt{2}$ exists in the whole diagonal, but not that it exists in every part of that line (57). The admission that in every line there is a certain number of points, of course implies the denial of all incommensurable quantities; that is, absolutely incommensurable, though for us and to our way of thinking, they are so: for in every such case the numbers are infinite to us, and we cannot tell whether they are odd or even (58—60).

Another perplexing question concerns the shape of the smallest figures possible, which consist of a few points only. Are they circles, triangles, spheres, pyramids, or what? They may be maintained to be either any or none of these, and it does not matter, since they are unimaginable realities in their extreme smallness. We cannot even conceive them distinctly by the intellect, at least in its present state of union with matter (60—63).

Objections based upon physical science. — Rarefaction (and condensation too) would be impossible in such a system. For if the whole

of space were filled with indivisible impenetrable atoms, should anything increase in size, the whole universe would become larger than it can possibly be. Yet rarefaction must be admitted; and a like argument has the same weight as regards condensation. Wyclif, in his reply, at once declares that he does not admit the possibility of a body occupying more or less space without gain or loss of matter. Rarefaction, therefore, and condensation also, are denied in this sense, but admitted in another. On account of the accession or the removal of another body, a substance may *seem* to increase or diminish in size; as, v. g., smoke seems to spread itself out and fill a room, whereas it is in reality mixed with the air. This is the only sense in which rarefaction is possible, and it answers all the objections. We need not follow our author through the mazes of Mediaeval physics which he threads, nor inquire whether this view would destroy all difference between the elements of fire, air, water and earth (63—70). Wyclif ends by stating, as his opinion, that the compenetration of two bodies is an utter impossibility. This conclusion evidently flows from his doctrine. Two points, having no dimensional qualities — nothing but position — would, if they coincided, lose even that essential quality, and be nothing at all. But it raises grave theological difficulties; for the School generally admits that God's Omnipotence can make two bodies occupy the same space.

Objections drawn from theology. Since spiritual forms, having more perfect entity than matter, can occupy the same space with it, then *a fortiori* matter can be coëxtended with matter. Besides, the glorified bodies of the Saints possess the gift of subtlety, i. e. of passing through matter; which seems to imply compenetration. — The answer is a repeated denial of its possibility (71). The gift of subtlety, bestowed on glorified bodies, is somewhat perplexing; but there are various ways of explaining it without admitting compenetration (72, 73).

Objections drawn from chemical combination. — If every punctal atom is and remains eternally the same, then the elements would remain in their compounds; size would be made up of that which has no size, and movement of what is not properly movement, as one point passes *instantaneously* into the place of another. — The first of these conclusions is granted by Wyclif, though the question itself was, during the whole of the Middle Ages, a battle-field for the rival sections of the School. The Thomists maintained that in all chemical combinations,

as distinguished from mere mechanical mixtures, the elements do not exist any longer actually, but only potentially; that is, they may, under certain circumstances, again be extracted from the compound. Their position, as given in their text-books of Philosophy at the present day, is that in a mere mixture — of hydrogen and oxygen, for example — both elements, though mingled together, do really and actually exist; but that as soon as the mixture is exploded they no longer exist in the compound — water — except in this sense, that the water may be analyzed into its constituents. Of course, so long as it is not possible to show them the atoms coëxisting side by side, they are free to maintain that their existence is only potential. But, even during the Middle Ages, the Scotists protested loudly against such an assumption, of which nothing could prove the truth.

Wyclif takes the side of the Scotists, as he was bound by his system to do. He gives us a disquisition on the conditions necessary to chemical combination, which seem to be almost the same as those now posited by modern science (74); and then he observes that Aristotle's assertion of the non-existence of the elements in a compound ought not to be taken literally. Even Averrhoës' position, viz. that they exist, but with less intensity of being, would be contrary to the system of inextended points; compenetrations being impossible, nothing can interfere with their intensity of existence (75). With yet greater decision he opposes the hypothesis of merely potential existence. If the reason that there is a form which unites the elements in one compound (making the elemental forms to exist no longer) were valid, then in a human body, of which the soul is the form, nothing would remain of the body but its primal matter; and that body, so complicated in all its parts, would be simpler than an element (76). It may be worthy of remark that this conclusion, strange as it may seem, is even now admitted and taught by that branch of Neo-Scholasticism which adheres strictly to the teaching of St. Thomas. When the human form, or soul, departs, what (they are asked) takes place in the body? Do not all the elements exist in it again? And if they exist there at once with all their differences, can it be that they were only potentially there before? The answer given is that after the soul's departure, a new, but transient form comes to give being to the body; it is called the cadaveric form, *forma cadaverica*, and precedes the various forms of decomposing matter, which succeed

each other until the final evolution of the elements. All this time the elements were *in potentia* — *remotissima*, *remota*, *proxima*; then *in actu primo remoto*, *in actu primo proximo*, and at last *in actu secundo*.

Wyclif continues to urge the point against his adversaries. If we get the elements out of the compound, they must have been there before; and many instances go to prove that they actually exist there; for instance, the phosphorescence of fishes' scales in the dark is attributable to the actual existence of fire (77). And as a fact, we find in combinations the same qualities as were before in the elements; or if not, a mean between them; or their reaction in the compound may even produce a quality. There is no need to suppose that the former qualities are destroyed because they do not appear (78, 79). I have added the last clause as the answer of such philosophers as dispute with the modern Thomists, who point out that carbon, hydrogen, and nitrogen are harmless, and that prussic acid is a violent poison. The poisonous quality is merely the reaction upon each other of various qualities of the three component elements.

To this the adversaries reply that such a compound would be but a mere aggregate of atoms 'which a man that had the lynx's eyes might see separate'. Wyclif's answer is that of the modern chemical school; they are not mere aggregates: *what differentiates the compound is the relative position of one atom to another* (80). But, it is urged, if the elemental forms are everywhere in the compound, the superadded form of the compound must be nowhere. Wyclif replies that this form is everywhere in the whole, and to a certain extent, indivisibly so, being less material than the elementary forms. There is something of the universal in these higher forms, which exist partially in each atom, considered as part of the compound (80—81). — One last difficulty. In this system, the whole world is one being; and one only, since all points touch, from the centre to the extreme point where space ceases to be possible. — It is quite true, answers Wyclif, that the world is one being; but it does not follow that everything in the world is one. One being may be separated from another by a third. Continuity does not mean sameness of nature. Every part of the world joins in and aids the harmonious action of the whole; all things are made for man, and it is for that reason that all the elements concur to form his organs of sense, and

that some of them predominate in certain of the elements, and others in certain others (82—85).

What is the measure of velocity of motion? — Not, says Wyclif, the space gone over by the mobile in a given time. This seems paradoxical; but an example, given directly afterwards, shows that our author is thinking, not of the distance in length, but of the whole surface gone over. A large body and a small one, though moving with equal speed, will go through very unequal spaces in the same time. What measures the motion of any body is the point of maximum swiftness, which in every case must exist, and must exist somewhere at the surface of the moving body; there is also a point where the movement is reduced to a minimum, but Wyclif, somewhat unaccountably, restricts this proposition to living beings that move (86). Now the measure of velocity of a body is the line described by the point which moves fastest (87, 94).

General arguments against Wyclif's position. — The First Mobile, being the outermost sphere, and having no space beyond it, can describe no line at all; planets have many movements, and no point can be said to describe them all at the same time. Again, if we suppose a given length passed over in a given time, this may be done by mobiles of infinitely varying velocities, which would all have this length and time for the measure of their respective velocities. And we can conceive the case of a body continually losing its swiftest point by the very fact of its movement: which would refute the assertion that every mobile must have such a point (87, 88). This last objection is urged, from p. 89 to p. 92, in a long argument which I have been utterly unable to follow. Wyclif then points out that the reason for which some deny the general idea of movement (abstracting from its rapidity, and allowing a general measure of velocity for the whole mobile) is in reality the doctrine of Nominalism. Nominalists do not want to admit a universal idea of movement which exists even in bodies at rest, when acted upon by contrary forces (94). The movement of a body is as swift as that of its swiftest part; this swiftness is the measure of the whole (*ib.*). As to the objections, that of the First Mobile has no value whatever. What that sphere describes may not be formally called a line, but it is equivalent to a line. Planets have not many movements, but one which is tantamount to many (*unus motus, habens rationem diversorum motuum*) (95). If, in the last case, the point of greatest velocity is continually lost, a new

one is continually brought into being; take the velocity common to each of these at each instant, and you get the speed of the whole (96).

Here comes a curious passage, in which Wyclif is led to state the exact rapidity of the swiftest movement possible, viz. one point per instant. It seems to us that, in continuous movement, whether slow or quick, one point — an infinitely small distance — is always passed over in the infinitely small interval of one instant. This is denied. In all movements which are slower than that of the Equator of the First Mobile, we have two, three, four . . . instants during which the point is motionless, and then passes instantaneously on to the next place, which is infinitely near (97—99). In all these remarks, and elsewhere, as the reader will doubtless perceive, there is a dim perception of the non-equality of infinitesimal quantities; but the state of Mathematics was not then sufficiently advanced to foster the idea, and Wyclif himself, though far in advance of his time, was more of a metaphysician than of a mathematician. His conception, if carried into the field of pure Mathematics, might possibly have had good results; understood in the Realistic sense, they came to nothing.

A logical quibble about the possibility of instantaneous change (whether, between the instant of changing and that of having changed, there is any interval) brings our author to a short digression upon death, which takes place in two instants. In the first, the man dies; in the second, he is dead; for we cannot say, *he is dead* at the instant when he dies, nor *he dies* at the instant when he is dead. Other writers would say that the instant of death is the same in both cases; but viewed from different standpoints: as the end of life, and the beginning of non-life. This, Wyclif says, is impossible (100).

Astronomical objections. — The assertion that the Equator alone moves one point per instant is beset with many difficulties. The First Mobile is a perfect sphere; its movements therefore ought at all points, and not only at the Equator, to be uniform. But every point in the First Mobile does not touch every other: so the smaller circles, making a shorter journey in the same time, will not require to move so fast. The circle tangent to the Equator has but one point fewer than the Equator; performing its journey in the same time, it will remain immobile for one instant, to make up for the missing point: which of the points is missing we need not enquire. — The Poles belong to the great circles,

perpendicular to the Equator, i. e. those of which the curvature is the smallest; at the same time each of them forms the smallest possible of circles — a point — parallel to the Equator, and of which the curvature is the largest. Which of these curvatures belongs to that punctal atom which is a pole of the world? Wyclif, noticing that the difficulty would tell against his adversaries no less than against himself, solves it by denying that any one circle is more curved than another; in each circle every point of the circumference is equally distant from the centre. — If the Equator consist of tripunctal atoms, it cannot be a circle. For these atoms do not form a curve; they are either in line or make up a triangle; in either case, there is curvity. Wyclif answers that, being points which touch each other without any distance between them, they form neither a triangle nor a straight line. Geometry is only seemingly against this, because such things are conceivable by the mind alone, not by imagination. That science cannot give us absolute exactitude (100—111).

Of Augmentation. — Leaving the questions concerning local movement, and coming to the movement by which, without changing its place, a body increases in volume, Wyclif points out that augmentation, strictly taken, means only the increase of an animated being, caused by nutrition and by the assimilation of food (111), gives us a description of the digestive process such as might be expected, interesting merely as a curiosity (112, 113), and enters into a disquisition about the cause of natural death from mere decrease of vitality (114, 115). The movement of augmentation is not continuous any more than undulations are continuous; it is a collective entity, consisting of many movements (115, 116). The difficulties which follow are of slight moment, and only serve to bring in a description of the various kinds of tissue in the human body. The rapidity of augmentation depends on the size acquired and the time taken to acquire it (116—118).

Of Alteration. As alteration is a change in quality, grounded upon the substantial components of each body — matter and form, — it is mainly Wyclif's theory with respect to the latter that is discussed here. Having expounded his idea of the universe — one material being, made up of punctal atoms, filling all possible space, and unchangeable except in so far as one of its parts can be separated from another by local movement — he states that the world can be thought, *firstly*, as mere

being; *secondly*, as substance, or the subject of various attributes; and *thirdly*, as matter, being extended, and possessing form (119). Thus matter, form, and the compound are the same being, the same essence, and not separate realities (120). This, in fact though not in words, is the denial of matter and form in the usual Scholastic sense of "two distinct realities, whereof the latter determines the former and the former is determinable by the latter which at the same time is sustained in existence by the former: both incomplete in themselves and apart, but together making up the complete material substance". In Wyclif's system, there is no need to admit such dualism. The simple inextended point *may be* either fire, air, water, or earth; this possibility is matter. It *is* actually one or other of the four; the igneity, aëriality, &c., which it possesses is its form. And the point itself, as being thus whilst able to be otherwise, is the compound. Denying the existence of extended atoms, the writer, whose system here does not differ much from that of other Atomists (*i. e.* so far as his way of explaining matter and form goes), escapes from many difficulties which beset the path of those who admit that the primordial atom is extended. But there are others.

Objections. — It is asserted that matter and form, since they are parts of the whole compound; cannot be identical with the whole. But Wyclif notes that they are not quantitative parts — as, for example, the head and the heart in man — but qualitative merely, like rationality and animality, for instance. The whole man is reasonable and is animal; the whole man is not at once head and heart (121). We have thus a sort of trinity in which matter, form and compound, identical in one sense, are different in another: but Wyclif takes great care to point out the difference between this trinity and that of the soul, or of God (121, 122). — If matter, as Wyclif asserts (121) is eternal, form is so too, being identical with it; and thus the world is eternal. But here he denies that the radical identity of matter, form, and compound with Being, renders these three identical with each other. Man is reasonable, man is animal; yet rationality and animality differ. All that is true, is good; yet truth is not the same thing as goodness. And Wyclif points to the Incarnation, as affording us another instance of a similar fallacy (123). — On the supposition that every essence is in reality everywhere the same, we have all sorts of contradictions. The answer to this is that contradictions may coëxist in the same subject, either at different times, or

in different parts. No quality is essentially inherent to primordial matter; therefore, nothing can contradict it. A body composed of parts which come and go successively may receive different and contrary qualities, and yet remain the same; as, v. g., the Mediterranean may ebb and flow, and yet be the same sea (124—127). Thus, when we say, *This is hot*, we speak of the compound alone; it is *that which* is hot. Here comes a digression. How can heat, the proper quality of fire, be found in water, which is naturally cold? Particles of fire may be mingled with the water, though they are in a violent state; the water, if left to itself, will soon again become cold. However mingled the different elements may be, they still obey the laws which govern their nature (128—130). The chapter closes with a short survey of creation, beginning with the elements which, uniting, form vapours; these produce metals and earths; the earths, if mingled with fire and water, bring forth plants and also animals in an ascending scale of forms, the lower hardly distinguishable from inanimate beings, the highest, quasi-immaterial. The soul of man is completely so; and each higher form includes in its perfection that of the lower ones (130—132).

b) Chapter X.

Summary of the Contents.

Temporal Propositions do not affirm that the known is wherever the knower exists (133, 134). — *Objections refuted* (134—155). — *Are all things together in time and place? Arguments contra* (155—157). — *Wyclif's solution* (157—161). — *Corollaries* (161—165). — *Three views on the essence of Time; 1st that it is identical with God or the world* (165—166); *2nd that nothing temporal is in the present* (166—170); *3rd that Time might be indefinitely lengthened by God* (170—173). — *Wyclif's view: Is extends to all past and future time* (173—177). — *Objections refuted* (177—191). — *An eternal antecedent does not necessarily produce its consequent in time* (191—192). — *A cause produces its effect before that effect exists* (192—199). — *Time is the same everywhere. Arguments contra refuted* (199—211). — *Movement implies time; refutation of objections* (211—224). — *The non-entity of the world did not precede its entity* (224—227).

Is the known wherever its knower is? — No; for then everything would be, as God is, everywhere (133, 134). It is objected that everything is truth, and that truth, like God, is everywhere. We may, however, admit this, restricting the sense of *being in space* to *filling that space quantitatively*. Thus, granting the force of the argument, we nevertheless deny it in the signification usually given to words. Christ's Body has size in the Sacrament, yet it does not properly fill space; it is present without either position or shape. The bread is not annihilated; what remains is a purely mathematical body, but not nothing; the sacramental sign is the reality of Christ's Body (134—137). It may be urged that the fact of movement is not extended in space, and that movement is consequently everywhere. But local movement is the movement *of a body*, and must be extended with that to which it belongs. Virtues, again, exist throughout the whole man, body and soul; but they are nowhere else but where their subject is. When a part moves, the whole may be said to move, it is true; only in a different way (139, 140). Movement thus takes its determination (*individuacionem suam*) either from its subject alone, *qua* subject, or from the subject with all its integral parts, or from this with the velocity also taken into account. The third point of view implies the first and the second; but not *vice versa*. Wherever there is a more individual movement, there is also a more universal one; and in this sense, movement as a universal, is everywhere, according to Aristotle (140, 141). God indeed is all truth everywhere; yet truth, as created, is not identical with God, and it were a fallacy to draw such an inference. The sense of words in these questions depends much on their position in the sentence. "It is *now* possible for a given future instant to exist", and, "It is possible for a given future instant to exist *now*", are two widely different propositions. God's knowledge of everything is absolutely boundless. No time exists for Him. *He is* means *He is yesterday*, or *He was to-morrow*; existing at once in all eternity — an instant to Him, — He comprises all duration in His being (141—143); and therefore His existence is an eternal *Now*. — Again, we have a similar sophism: "That may necessarily be which cannot be necessarily." This is false, but only when understood of absolute, not of hypothetical necessity. A future instant is necessarily "*about* to be", at a time when it cannot possibly *be* "*about* to be". All this is mere foolish subtlety; we go no farther than to say that, if at any moment it is true that a given being

will exist, the being is in the future (143—145). At different times that which is white is black, a man differs from himself, &c.; but this implies no absurdity. Becoming is a change, not of the subject, but of its 'suchness.' An instantaneous change does not imply an infinitely swift movement, for the idea of swiftiness implies that of time, not of one instant only (145—147).

A great many fallacies are brought forward against this position, such as that, v. g., if future whiteness be always predicable of an individual, that individual will always be white; so that if at any time he were black, he would have and not have two essential contradictory qualities; or that a king cannot have been baptized, if, when baptized, he was not yet a king; and so on *ad infinitum*. They all belong to the class of *fallaciae accidentis*. "What you have bought, you have eaten; but you have bought raw meat; therefore you have eaten raw meat." The change from black to white is one, not of nature, but of quality. The individual differs from himself modally, not essentially. The 'being a king' is in a man a mere accidental quality; the king has been baptized, not as a king, but as a man. "He who is now a king, was baptized when not a king", is perfectly true. Much depends on the compound or the divided sense in which terms may be taken. "He *who is begotten is David the king*; *David the king* and *who is begotten* belong, as predicates, to the verb *is*, in the divided, not in the compound sense. Besides, the act of begetting is not instantaneous; it has many preparatory acts (147—154). — There are also several theological arguments on p. 150, concerning the possibility of God's assuming the personality of all creatures, which Wyclif briefly meets by denying (154, 155) in direct opposition to Aquinas (Sum. Th. p. 3^a qu. III. art. 5, 6).

Are all things together, both in time and place? — Wyclif first of all gives the arguments *contra*. If it were so, there would no longer be any distance between things. The future and the past would exist eternally; a man would both exist and not exist in the same (eternal) time. Again, whatever takes place in any part of space and time, must take place there only and only then; its existence cannot possibly be extended any farther (155). On the other hand, the world is everywhere; yet the *whole* world is not in any part of space; and in like manner, if anything exists at any time, its *then* existence is true in all time; and so also of space (156). — Wyclif thinks that this question arises mainly

from the varying senses of the word *together*. Two things may be said to be together, i. e. both occupying exactly the same space (an absolute impossibility) or contiguous, each being in different places, or both, though separate, being contained in the same larger space. As to time, absolute simultaneity is possible (157). This answers most of the objections. *Always* may be understood as meaning *eternally*, or *during all eternity*, or *in some part of all eternity*. The last sense is of course widely different from the others, and in this sense alone, *whatever is future or past is always* (158). We may see a thing, though we do not see the whole thing; just so, a man may exist in the Xth century, though non-existent during a part of the Xth century (158, 159). To maintain this, however, we must say that time consists of instantaneous elements. For, if instants are not parts of time, then instantaneous events (such as cognition, division, &c.) could not be said to exist at any time, having no duration. And if not at any time, their contradictories would be true in all time, notwithstanding that they also would be true. It cannot be said that, from non-cognition to cognition, there is a change which implies time; for from one contradictory to another, there is no real change. That which is not white now, if at any time it is to become white, cannot receive the predicate of mere non-whiteness: so non-existence in a part of time is not non-existence in that time. After death, a man is neither simply non-existent nor existent: he is non-existent *then* (160, 161).

Corollaries. — Time, the duration of the world, began with the world, and with it must last eternally; necessary to the creation of the world, it does not depend on anything but the general fact of movement. It consists of indivisible instants as its elements; these are absolutely without magnitude, and time itself is everywhere, indivisibly the same throughout the universe (162). As the world is everywhere, so is time, and so is God (163). What begins and ends in time (as corruptible entities); what makes up the very essence of time (as an instant); what has modes of being measured by time (as the heavens), may be called temporal, but in different senses (163, 164). Time is in itself a cause of dissolution, for it causes things to grow older; but occasionally it is a cause of production, since it renders their production possible. Its very essence is change, and no two of its parts can coëxist (164, 165).

Three views on the essence of Time. — a) It is identical with God or the world's existence. This view is absurdly erroneous; it would

make all things eternal, and destroy all certitude as to the duration of things (165, 166).

b) Nothing is, but everything either was or will be. This cuts short disputes as to the existence of things during an infinitely brief interval. But then, what never is, never was or will be. To God's knowledge nothing is in the future, so He would know, for instance, movement to exist, and it would not be true. One hour must be the double of half an hour; if so, there must come an instant at which this is true in the present: i. e. when half is past, half future, and the whole hour partly one and partly the other. *Present* may indeed be taken in a wider sense than one single instant. Here Wyclif shows clearly that, in the same way as he assumes the existence of separate individual points as realities, so he also assumes the real existence of instants, joined together to form time, shorter or longer, but also really existing in another time which includes both past and future. Instead, therefore, of a century being a present which is fictitious, consisting only of indivisible instants before and after each of which there is the non-existing past and the not yet existent future, the whole century forms a real present, though real in another sense than that of the instant which is *now*. And Wyclif adds that, if this be not admitted, he does not see how the sacramental words, for instance, "*Hoc est corpus meum*", can be true. Only an infinitesimal part of the proposition would exist; the whole, never; and consequently it never would be true. To say, "Nothing that is past or future exists", is in reality to destroy time. God's immutable knowledge of things, and His free-will, are both contrary to such a supposition. Christ, in the Divine Essence of the Word, saw men long before their temporal existence; but He saw them as existing, and they did truly exist in the reality of long centuries of the future. And thus He is rightly called, Son of David, Son of Abraham, in this real extension of time, by which David and Abraham come to be coëxistent with Him. Has a posthumous child no father at all? None, unless we grant the real simultaneity of its existence now with the past in which its father lived (166—170).

c) Time, though a successive quantity, can be lengthened out indefinitely by Almighty Power, so that one instant would be equal to ages. This is possibly the doctrine of the *aerum* or *instans angelicum*, familiar to Mediaeval Schoolmen, which some of them may have supposed

extensible to corporeal beings. According to that doctrine, the duration of Angels, from one thought to another, may last for centuries without change — centuries that are for them but one indivisible instant. This is generally allowed, and I have not anywhere been able to find any trace of the actual extension of the doctrine to bodily substances. But it may be explained as follows: Supposing that, at the present moment, God suspended every movement in the whole universe for a hundred years — like the tale of the Sleeping Beauty on a gigantic scale — and then allowed it to continue as before, there would be no movement, and therefore no succession of time; and one instant would be a hundred years in length. This is in flat contradiction to Wyclif's doctrine of eternal time, consisting of instants, each of which requires another *immediately* following it; so he is at some pains to refute the possibility of such a hypothesis. The instant is an individual quantity, which can neither be lessened nor increased. If it could, it would contain many instants, and thus be no longer one only. A short time would equal a long one; the essence of time would no longer consist in duration alone, for nothing could differentiate the 100-century instant from an ordinary one. In conclusion, Wyclif dismisses this theory with contempt (170—173).

Wyclif's view. *Is* extends itself really to all time, past and future. Whatever is, is always, as has been shown. If not, we deny the very essence of time. Its parts do not coëxist, but vanish as fast as they appear; yet they *are*; now in the past, now in the future: and again, in a wider present they may be said to coëxist. This is clearly signified by the sense of the verb *Is*, which by itself does not connote any given instant of time, and therefore signifies eternity (173—177).

Objections refuted. — To say that all instants, because they are together in eternal time, are together with absolute simultaneity, is but a sophism. Simultaneity requires that two things be together at the same instant or instants, and at no others. Now one instant cannot exist exactly when another does, but either before or after (177—179). — The often urged 'necessity of all things' may be admitted, if understood as merely conditional upon God's will; for whatever is determinately true, is necessarily true, and there is no such thing as indeterminate truth. Hypothetical necessity, as this is, does not deny contingency, nor the free-will of man, nor chance. The hypothetical fact that God foreknows anything, makes it necessarily exist at some time or other. Given that I exist, it

is not in God's power that I do not exist. But *when* must anything exist? At a moment known to God (179—183). The simultaneity of life and death would, as already stated, require them both to take place at the very same instant. Time exists, but its parts do not all exist *now*, only one at a time. *Now* is but one mode of an existence which *not now* does not destroy. An instant *then, now*, and to *come* exists differently, but cannot at any time be called simply non-existent. Antichrist must come: therefore he *has* come . . . in the future. That is a modal, but a real existence. It was never true that *I am not*. To exist and not to exist are contradictories; they may be true of the same being, but not in the same *Now*. God knows past, present and future things with the very same knowledge, yet this does not argue sameness in the object known. Light is not affected by the presence or the absence of the object illuminated. God may know present and future things as past, if they exist in time; things eternal are eternally present; such, for example, as the archetypes of what was, is, or is to be (183—188). Here Wyclif again returns to his adversaries' favourite argument, viz. that black is white, and all contraries identical. But one remark of his is worth noticing. A proposition may be true, and yet false at any finite part of time; as, for instance: 'All the instants of time exist'. This is true only for and in endless time (188—191).

An eternal antecedent does not necessarily cause its consequent in time. — If it did, all things would be eternal. God eternally knows and causes all that which exists temporally. The extrinsic act of God, terminated in the creature, is, *as thus terminated*, neither eternal nor necessary; the intrinsic act of His being is eternal and changeless (191, 192).

A cause produces its effect before that effect exists. That is, before its existence it is producing it, but not now; in the future. The ideal being of the effect depends upon its cause, and is produced by it before the moment when its real existence has to be actuated. On the other hand, cause, *qua* cause, and effect, are simultaneous. Many things are neither instantaneous nor temporal; v. g., certain eternal truths, and beings of which the existence is intermittent. Wyclif here wonders how the writers of his time can oppose his system, which is confirmed by the very expressions they employ; and he blesses God, who has enlightened him that he may escape the difficulties in which they are entangled (192—195). — The necessity of sin depends on our own free-will; the

fact of its happening, on the will of God. — The use of the present for the past and the future cannot be blamed as an abuse of terms, nor as the denial of expository syllogisms. No logician should use it thus when he is likely to be misunderstood through ignorance; but it is allowed to speak otherwise to philosophers than to the common people. Neither the expository syllogism, nor any other, is denied by Wyclif's theory, which on the contrary admits many forms of syllogism that others deny. — A curious difficulty is raised here by the adversaries (195). Wyclif is certain that he has had no son. Yet perhaps his son *is* wiser than he; for he possibly may have a son yet. If this son 'will be', then 'he is' according to the theory which extends the future to the present. Wyclif denies this conclusion, unless it is certain that he will have a son. At first sight it does not clearly appear how this can be denied in the form given. "*Filius meus ex mihi dubio esset sapiencior me.*" A supposition that depends upon another supposition is quite thinkable. But we must here remember Wyclif's doctrine — that the distinction between extrinsic and intrinsic possibility has no real foundation; that a seemingly possible creature is in reality impossible, if God has chosen never to create it (*See Logica* vol. II., *Intr.* XXIV). We have the right to deny the possibility of Wyclif's ever having a son in the future, unless we are certain that he will have one. Perhaps the individual in question is possible; God knows; but we know nothing at all about him (195—199).

Time is the same everywhere. — Our author begins by enumerating the arguments contrary to his own opinion (199—202), and then refutes them one by one. Even if the world were not everywhere, it would not follow that time is not everywhere. But as a fact, the world being (partially) in each and all of its parts, that argument must fall to the ground (202). — It is denied that the world has any unity whatever, being a mere aggregate; and time, an accident belonging to the world, cannot have more unity than its subject. But Wyclif points out that the laws of nature give unity to this aggregate, just as political laws give unity to an aggregate or assembly of men. Besides, the world, notwithstanding changes, remains the same in its efficient cause — God — and also in its material cause — the atoms of which it consists. If we grant that the world is animated, its unity becomes much more evident; now, we have many proofs that it really is an animated

being (202, 204). — If a part of the world could become the whole, then indeed the duration of each part would have separate existence. But this supposition would be true only in case a part of the world were annihilated; a possibility which Wyclif absolutely denies (204, 205). — What is extended is not everywhere the same. True. But is time extended, merely because it is the duration of a body? No. A man's duration does not change, if he happen to lose some part of his body. Movement indeed, though inextended in itself, is extended in the body which moves. But take away any part of a body in motion, and the whole quantity of the movement is lessened; the same cannot be said of its duration. Thus we may define Time as the universal, indivisible and ubiquitous duration of all temporal things (205, 206).

Another objection, on which (to judge from the length at which it is dealt with) Wyclif's opponents seemed to rely a great deal, may be summed up as follows: Were time everywhere the same, day would be night, summer, winter; fair and foul weather would be identical: for they are parts of time. If Wyclif answers that the same time may be night in one place and day in another, he is met by the reply: How then can time be *the same* in every place? Where there is night, there is no day. If time, which is everywhere, be night, then night is everywhere; or if not, the universals Day and Night have a semi-spherical shape, and pursue each other round the earth! A body moving swiftly westward would enjoy a longer day, and night, being everywhere where day is not, would exist in the interior of every opaque body. All which is manifestly absurd (200, 201). — The answer is obviously that day and night are not time, but times. Time happens to be called day or night according to the circumstance of the presence or the absence of light (206, 207). Time, i. e. that which is here as day, may be (and is) elsewhere as night. To say that light pursues darkness is a mere metaphor which may be admitted or denied as we choose. That night is semi-spherical, because it occupies a semi-spherical space, is not more true than that God is round, because He fills the rotundity of the universe. We ought also to draw a distinction between natural and artificial night and day. Day exists eternally throughout the whole world, except in the interior of the earth, or in its shadow. Night is nearer and nearer to a fixed point on the earth's surface; it does

not follow that night moves, but that the movement of something else (i. e. of the sun) causes night to be nearer. Many quibbles arise from too lax a use of words. We have day after sunset; an eclipse may cause night at noon, it being caused by the moon's shadow, not the earth's; and the moon, if self-luminous, would be the cause of day. Every kind of obscurity may be called night. All these difficulties spring from different meanings given to the same words. Properly, day exists on earth only when the sun is above a given horizon. But this is merely incidental, and quite irrelevant to what time is in itself (207—211).

Time implies movement: objections refuted. — Time requires the idea of a Before and an Afterwards, which are to be found only in movement. If all movement were to cease, time would cease too. It is objected that the mere act of imagining time, without any movement, would suffice to cause time. Imagination would certainly create time by the very fact of its activity; but this is itself a movement, and the hypothesis of a bodily faculty working without motion is utterly absurd (211—215). At this juncture, Wyclif enters into a digression respecting the happiness of the Blessed in Heaven (215, 216) and the misery of the damned (217), which is relevant to the question in so far as, positing eternal time, Wyclif must posit eternal movement of some kind. He asserts that all movement cannot cease in the world; successive knowledge, and (I may add) the feelings of pleasure and of pain, require it (217). Whether the world will continue to move after the Day of Judgment is not so certain. The changelessness which follows upon the attainment of the end of any being, may be called rest, and such rest is not opposed to successive motion. But the rest of a being that can and does not move must be denied for many reasons, one of which is that, applied to the world, such rest would neither be successive nor instantaneous; neither in time nor in any part of time. Lines, &c., may begin and end instantaneously; but this cannot prove that a substance may do so too.

If it be true that the hand of a clock, turning round in exactly 24 hours, would measure time as well as the First Mobile, we have a very slow movement equal to one exceedingly swift, as regards time; therefore movement and time are not interdependent. — This objection, Wyclif admits, contains a point which the imagination is unable to

represent. What is necessary is that the movement by which time is measured should be regular. Our author here gives some rather intricate explanations as to the possibility of a first instant of time, in answer to the objection that, at the first instant, there is either movement or rest; if rest, then no time exists; if movement, that implies a Before, and there is no first instant. The objection might easily be answered by saying that the first instant is not properly a part of time, but merely a *terminus a quo*, a starting-point: only such an answer would contradict the whole of Wyclif's theory. — A last difficulty, viz. that the world, immediately after its creation, might have remained at rest for some time, is met by a flat denial. Rest is a perfection, but not such as can belong to the world. That it will exist eternally is no contradiction to the assertion that it began to exist; but here there is a very considerable difficulty (*non occurrit michi promptus modus explanandi me in ista materia . . . ideo transeo pro presenti*, p. 224). Evidently Wyclif's system, positing the necessity of the world's everlasting existence, because each instant of time requires one that follows, is endangered by the question whether each instant does not require one to precede it: the old objection of Aristotle, who for that reason asserted the eternity of matter, an assertion contrary to faith.

Whether the non-being of the world preceded its being. — This last question arises out of the foregoing one, and seems (though that would contradict other parts of the system) to lead our author to a conclusion like that of Aristotle. For if it be answered negatively by the assertion (225) that the world's non-being never was, and that its being was always, this looks a great deal like the doctrine of the eternity of matter. But in the answers to the objections, we find that Wyclif distinguishes between *to be* and *to be existing*. As *I am* long ages before *I exist* (according to him) so the ideal (though real) being of the world was eternally before its material existence; being before, it was *without its existence*, but not *with its non-existence*. Of course it is very hard to get out of the difficulty, which is on a par with the rest of the system; but the answer satisfies Wyclif's doubts. Ideal being, *that which* is the existing world, really was in eternity before the world existed. It was identical with God's knowledge, so long as God did not know the world to exist *now*, i. e. in the first moment of time.

IV. Conclusion: The gist of the Nominalistic controversy.

With these arguments the third volume of *Logica* closes somewhat abruptly. Like the rest of the work, it abounds with arguments of striking force, as directed against Nominalistic exaggerations; but, on the other hand, Wyclif's theory of Space and Time lies open to a great number of objections which even his ingenuity is not always able to refute as satisfactorily as might be desired. In many parts, for modern readers at least, it has only the interest of an intricate puzzle.

The problem of the Universals, however, though seemingly as dead as any other philosophical question of the past, deserves a few concluding words. I shall endeavour to show that, under other terms, and until some fuller explanation is found than has yet been given, it is and will remain for ever the great stumbling-block in the path of all metaphysical inquirers.

When we have the idea of *a* man, *an* animal, *a* substance, we conceive something that is universally the same in all men, animals, and substances. Is there anything in the objects of our thoughts that corresponds to it — anything really universal, *universale in re* — or is there nothing? If we answer in the negative, we hold the Nominalistic position; if in the affirmative, we are Realists in the old sense of the word.

But to answer affirmatively, we must, either implicitly or explicitly, lay down the following formula: *What is in our mind exists in itself in the same way as it is in our mind.* Lay this down, and you have Berkeley's denial of matter, German transcendentalism, and modern Idealism in general. *Esse est percipi*; to be is to be perceived. Matter exists as we know it, and as much as we know it; outside of the knower, it has no being at all. The Non-Ego is posited by the Ego, and is identical with it. We can have cognizance of the external world only as a modification of ourselves; and if it exist *as we know it*, it is nothing but this modification.

On the other hand, Locke's conceptualism, the materialism of certain XVIIIth century philosophers, and the empiricism and positivism of our own times, proceed from the negation of this axiom. Locke, in order to affirm the limits of the human understanding, was obliged to deny to certain ideas any value but such as is merely subjective; which amounts

to saying that, however infallible the deductive process, however evident the first principles from which we start, we are still liable to be mistaken, because *things may be otherwise than as we know them to be*. To assert that all is matter, and that even the acts of our mind are material, notwithstanding our conscious certitude that there is an abyss between the two, is to set down that whatever we know, no matter how indubitably, may be false if it goes beyond material facts, and laws relative to matter. Again, the statement (which would ruin Metaphysic, if Metaphysic could be ruined by man) that at the bottom of all our inquiries into first principles, we find self-contradictions and absurdities in every possible assertion on either side; and that consequently though we can know neither space nor time, we must confine our investigations to that which is conditioned by time and space: — this well-known doctrine is based upon the denial that things are as we know them.

The quarrel between Realists and Nominalists is thus an important phase, but only a phase, of the everlasting struggle between two opposite currents of thought. I call it everlasting, for though the forms may vary, it is likely to spring up for ever, or at least so long as human curiosity as regards such high and abstruse matters continues to exist.

Not that there is no answer to the problem, no middle way between the absolute affirmative of one class of philosophical thinkers, and the uncompromising negative of the other class. But in this very answer we find the reason why it is not universally accepted as settling the point in dispute.

Do all things exist as they are known by us? *As* is a very short word, and (it would seem on a superficial view) not equivocal in the least. But let us consider it more closely. Things seen in a looking-glass both are and are not *as* they are in reality. There is a certain resemblance, more or less perfect; but the difference between them is that between the image and the original. In the same way, so far as any comparison is possible, the human intellect is the mirror of Nature. Our thoughts are the images of things; but we can no more conclude that things are of the nature of our thoughts than we can infer that a nosegay *out* of a looking-glass is of quicksilver amalgam, because *in* the looking-glass it is imprinted upon quicksilver. Thus, things exist as they are known by us: that is, we have the right, they being the causes of our thoughts, to make certain inferences

from the effects to their causes; inferences necessarily vague and indeterminate to a great extent, but none the less true, on account of the necessary resemblance between the image and that which it images. Even a shadow, however distorted and indeterminate, bears some resemblance to the person who casts the shadow. But on the other hand, things do not exist as they are known by us, if *as* means a complete identity of nature between the known and the knowledge thereof. For *that which* is the known, is such only from one point of view, or at best only from a few points: it — i. e. the same *that which* (as Wyclif would say) — is the Unknown from millions of other points of view. All the sophisms in the world cannot get the better of this distinction, by which all similitude of *nature* between knowledge and the known is excluded, whilst similitude of *representation* is carefully maintained.

But it is precisely this answer, though given by many great minds, both amongst the ancients and the moderns, that fails to satisfy by its very moderation. We long to get behind the 'Thing-in-itself', and if we find we cannot, we cry out that there is nothing at all outside the mirror; or, after many a squabble, weary of disputes, we deny that we can know anything of that which the images represent, and that all science ought to be concerned with the images alone and their relations with each other. And thus the disappointment caused by the perfectly natural and simple answer given above leads to two contrary excesses of thought. Some, yearning towards the Absolute, conceive endless systems by which to go beyond the limitations of the mirror: systems beforehand doomed to failure as hopeless as the search after perpetual movement. Others think that the contrary extreme is the only tenable position, and reject even such limited inferences as may justly be drawn, nay, that our very nature compels us to draw. Those aspire to be as Gods; these are content to throw away part of the inalienable birthright of men. Wyclif, I think, belongs to the former category. His system was, partly at least, a mistake; but it was the mistake of a bold, powerful, and comprehensive mind. He and all those of his class were philosophers, gifted with a mighty grasp of thought, and immense mental acumen; whilst the others, however ingenious their subsequent endeavours to reconcile their principles with facts, must, by the laying down of those very principles, strike at the root of all philosophy, and even of human reason itself.

TRACTATUS TERCIVS

Continuatur.

CAPITULUM NONUM.

B 99^b Sequitur de localibus pertractandum. Supponendo primo omnem ypotheticam adverbio loci copulatam cum porporionali actu esse localem; ut est talis: *Sor currit ubi Plato currit*. Est autem iste species ypothetice (sicut causalis, comparativa, et temporalis), affinis cathegoricis, cum signa coniungendi talia convertuntur cum cathegoricis. Idem enim est dicere: *Sor currit ubi Plato currit*; et: *Sor currit in loco in quo Plato currit*. Et hinc, 2^m auctores, adverbia loci et temporis sumuntur quandoque nominaliter pro denominationibus cathegoricis a loco et tempore: ut patet de istis: *ubi, quando, nunc*, et similibus. Sunt ergo tales propositiones quante et quales, ut cathegorice: et per consequens sunt iudicande vere vel false, contradictorie, equipollentes, vel aliter passionate, sicut cathegorice. Unde hec: *Sor non est ubi Plato est*, habet 3^s causas veritatis. Vel quia alter illorum non est, seu uterque, vel quia idem locus non continet utrumque. Illud tamen non est compositibile cum *esse* istorum; quia, sicut necessario omnia que sunt, simul sunt tempore, sic necessario omnia que sunt simul sunt loco communi. Unde, quamvis nomen loci sit equivocum, satis tamen est pro nunc cognoscere locum qui est situs.

25 Pro quo noscendo, notandum mundum componi ex certis athomis, et nec posse maiorari nec minorari nec moveri recte localiter vel aliter figurari, ita quod tantam multitudinem athomorum consequitur tanta quantitas continua et talis figura, propter causas immutabiles

Local propositions comprise all propositions that are joined to another by an adverb of place. This species resembles categoricals, for *where* can be resolved into *in the place in which*; thus rendering its proposition categorical. They are quantifiable and qualifiable, and have the other properties of categoricals. *A is not where B is*, may be true either because one or the other does not exist or because their whereabouts is different; but this last is not possible if both exist. Place is equivocal; here we shall deal with it, taken to mean position. The world is made up of atoms, can be neither increased nor diminished, nor moved in

1. Cap. deest; blank space for initial S.

29. ⁹unalas in marg. B.

a straight line,
nor changed
in shape; all
this is
immutably
dependent on
the number
of atoms.

Site follows
matter; where
there exists
the mass of the
world, there is
the same place.

The point is
the principle
of which
partial spaces
are made up;
but that by
which we know
these partial
spaces is the
whole extent of
the world.

If the world
has subtle
motionless
parts, to which
is united the
Power that
rules the world,
it becomes easy
to distinguish
place.

Into such parts
there can enter
different bodies,
one after
another.
Plato calls
place *matter*,
emptiness, &c.

There is no
difficulty as to
compensation,
since theology
teaches that it
is not
impossible.

naturales. Aliter enim non esset mundus capacis-
simus et convenientissimus in figura. Et ex illis sequi-
tur situacio mundi et eius duracio. Unde Aristoteles,
nominans quantitates continuas, nominat species per ordi-
nem se habentes, ut lineam, superficiem et corpus; et 5
preter hoc locum et tempus, quorum omnium princi-
pium est punctus; et unitas est principium puncti. Et
tam necessario consequitur locus materiam quod ubi-
cunque fuerit ista maxima materia mundi, ibi est iste
locus. Sic quod, si moveretur recte (per impossibile) 10
in vacuo infinito, foret continue idem situs, cum ad
individuacionem illius situs sufficit extensio illius materie.
Manet autem necessario ista materia, etsi infinite eius
partes corrumpantur; quia oportet illas continuari ali-
unde cum residuo huius materie. 15

Et sic, quamvis species situs punctalis sit principium
integrandi omnem situm divisibilem, tanquam minimum
metrum illius generis, tamen totalis situs mundi est
nobis mensura cognoscendi alios situs particulares, et
prior in perfeccione et intencione nature, cum gracia 20
illius situs quem principaliter intendit, ordinat natura
situs indivisibilem tocians multiplicari 2^m eius indivi-
dua. Si ergo mundus habet ad omnem eius punctum
partes immobiles, subtiles, comitanter ad speciem in
animali, cum quibus copulatur virtus mundi regitiva, 25
que facit informaciones vivencium et alia opera laten-
cia; tunc facile est distingwere situs parciales, cum qui-
libet situs partialis foret *talem partem situari*. Et | in B 100^a
talem partem ac eius situm possunt quotlibet corpora
vicissim ingredi, sicut theologi ymaginantur omnem 30
ultimum immobile se habere. Et illius opinionis vide-
tur fuisse Plato, vocans locum materiam, ylen, vacuum,
vel fraudem fictam crassis tenebris involutam. Et quo
ad penetracionem corporum, non plus procederent contra
eum quam contra theologos nostros ponentes quod cor- 35
pora possent transire in celum sine eius alteracione vel
corporis sic coextensi corrupcione. Unde Lincolnensis
ponit omnia astra esse corpora mixta ex puritatibus

6. locus B. 24. com^u completur B. 25. copulatur in marg. B.
33. cli, B. 36. lata'coe B. 38. pun'tatibg B.

24. *Immobiles, subtiles*. I suspect that Wyclif here means the
space by which the world is measured. See a few lines below: *in*
talem partem . . . possunt . . . corpora . . . ingredi. 32. *ylen*.
It ought to be *hy-len* = *ύλην*.

elementorum. Et dicit esse probabiliter opiniabile quodlibet astrum per se moveri, toto orbe residuo quiescente.

Relictis ergo istis ambiguis, loquendum est de situ qualiter oportet omnes rectiloquos loqui, quomodoque fuerint probabiliter opiniati. Nam, ponendo quod quolibet pars superlunaris preter polum continue moveatur (et sic de qualibet parte sublunari preter terram vel sibi adherencia, ita quod non sit talis pars mundi supernalis quita): tunc potest dici quod sicut ad
10 divisionem situs mundi sufficit ista materia, sic ad indisionem situs cuiuslibet partis sue sufficit quod iste mundus habeat aliquam partem sic positam in comparacione ad polos et centrum; que tria quasi omnes philosophantes dicunt oportere semper quiescere.

15 Ex quo ulterius concedendum est quod manet continue idem situs in numero, propter idemptitatem mundi et conformitatem distancie ad duplex quiescens, situato quantumlibet in substancia variato. Si enim datum corpus vel quodcunque aliud se habuerit continue per
20 totum eque distanter ad polos mundi et quamlibet partem terre quiescentem: tunc est continuo in eodem situ; ita quod indivisio situs accipitur a gravitate corporis ex hiis tribus principiis, non autem a centro mundi indivisibili per se quiescente. Unde, si centrum
25 mundi et duo poli quiescerent, toto residuo moto, tunc quilibet motum 2^m circulum concentricum et eque distantem a polo mundi foret continue eque distans ad hiis tribus, et in casu a quolibet alio distante. Sed iam necessario multa terrena quiescunt, sicut et multe partes
30 celi, respectu quorum sic motum varie se haberet quo ad distanciam parcium. Sicut ergo continue manet iste mundus propter unitatem istius materie, quamvis illius mundi continue corrumpatur pars, sic propter unitatem mundi habentis quamcunque partem sic posita
35 tam, maneret iste situs partialis, quamvis continue sit nova et nova ubicacio.

Grave tamen esset videre quid subiectaret illum situm, et quod foret ultimum singulare situs. Cum situs datus sit commune, et cum omnis situs sit *aliquid situari*,
40 videtur quod quotlibet situs possunt esse simul, et unus moveri ad intrinsecum. Et sic locus per accidens

Every superlunary part of the world, except the poles, is in continual motion. Its matter suffices for the unity of its site; for that of its partial sites, we have their fixed relations with the poles and the motionless centre.

Place is, therefore, always numerically the same; if any body is always equally far from the poles and from the centre, it is always in the same place. Admitting the stability of the centre and the poles, any body moved in a concentric circle round them would be equally distant from them; but the distance from the motionless parts of the earth and the sky would vary. *Difficulties.* 1. If the space filled by the world is the common place of all things, many places can be together, and there would be no moving from one place to another.

9. fpualis B.
generabile (?) B.

9—10. indini° 3 B.
25. 2° pro duo B.

9—10. indini° 3 B.
28. 3° pro tribus B.

22. ague

2. One place would be placed in another: which is absurd.

3. No two things distant from each other could be in the same place, nor could they move from one place to another.

This comes from saying that situation is lost with the slightest variation of the subject, or that place is a hollow in the surrounding body, or denying that there is any other place but that body; and such opinions contradict the very expressions used in speaking of place.

Men and animals know that a moving body changes its place.

As the movement of the world, so its situation presupposes certain fixed points.

Thus these three (the two poles and the centre) cause the situation of the world.

Answers.

1. Situation belongs primarily to every part of the world out of which nothing can go;

locaretur, et sic in infinitum procederetur in locacionibus, sicut et in aliis quantitibus, sed non per se essent quante. Ista ergo situacio est *hoc situari*, et non *habere mundi vel relacio*, cum sit quantitas principians ubicacionem alterius generis, sicut tempus principiat ipsum *quando*. | Et per consequens nil distans a relicto potest esse adequate ubi ipsum relicum est, nec aliquid potest esse alibi quam adequate est, nec acquirere locum vel moveri de loco ad locum sibi adequatum. Et sic non specificaretur motus localis per terminum *ad quem*, vel eius materiam, cum nichil potest moveri de loco ad locum.

Ista et multa similia dependent super isto, quod omnis situacio vel locus pertinenter signandus corrumpitur ad quamcunque modicam variacionem subiecti; et idem sequitur, ponendo locum concavitatem corporis locantis, et longe magis absurda ponendo nullum locum preter corpus locans, quia pari evidencia negaretur quodlibet accidens. Et deficerent verba ad exprimendum magnitudinem, adquisicionem vel immobilitatem loci, cum aliis philosophice de loco locutis. Nam tam homo quam bestia habet innatam sibi potenciam ad cognoscendum mobile mutare locum suum, sicut patet de naturali noticia situs, posicionis, distancie, et oppositionis. Ideo sicut in natura omne motum vel mobile innititur alicui fixo, sic non est possibile nos locum cognoscere, nisi in comparacione ad aliquod fixum. Sicut ergo mundus ad eius motum situalem presupponit polos et centrum quieti, sic presupponit ad eius situacionem eadem, saltem 2^m speciem, quieti. Et sic vere dicit commentator quod centrum mundi est causaliter eius locus; et per idem uterque polus, non quod situs indivisibilis sit formaliter situs mundi, sed quod hii situs principiant, tam quo ad *esse* quam quo ad *noticiam*, situm mundi et cuiuslibet sue partis. Cum ergo mens prius cogitat singulare fixum quam situm, non mirum si a tali individuat locum, et si locatum quantumlibet varietur.

Ad primum argumentum, dicitur quod situs parcialis est primo subiective in communi ad quamcunque partem mundi sic positam, et ab illo communi non potest

4. m̄di B. 8. aq̄re B. 9. locum *deest* B. 13. dependentes B.
23. mo¹⁶ m̄r¹ B.

migrare. Universalia enim sunt alicubi, et generabilia, et corruptibilia per accidens, ut patet ex dictis superius. Sed per accidens subiectatur in quacunque singulari parte mundi sic posita, licet non dependet a tali.

but it belongs accidentally to every particular part.

- 5 Pro 2^o notandum quod aliqua forma individuatur a subiecto proximo: ut ista sessio, ab isto homine sedente; aliqua a subiecto remoto: ut ista caliditas aeris, a materia prima. Ideo manet eadem caliditas in numero, aere converso in igne, licet non eadem individuatur quo
10 ad subiectum proximum. Et 3^o individuatur forma a suo principio extrinseco, licet sit communis subiecto: ut, iste situs, qui est ultimum singularis loci, licet sibi possunt accidere quotlibet ubicaciones. Nam ubicacio individuatur a subiecto et a loco, qui non est communis predica-
15 cione, sed causacione, ad quotlibet tales situs. Ad 3^m dicitur quod deus non potest facere duos situs coexistendi, nec duo puncta, | vel sua subiecta esse simul in eodem situ indivisibili. Verumptamen contingit duo corpora esse simul in unum ad omnem punctum alterius
20 cum hoc quod quilibet punctus alterius illorum habeat situm sibi proprium. Ex hoc patet quod non oportet, si ubicunque extenditur A extenditur B, et econtra, quod ipsa coextenduntur, sic quod quilibet punctus unius sit in omni situ formaliter in quo est punctus alterius.
25 Est ergo situs per se quantus et immobilis: per se quantus, quia quantus sine alio formaliter ipsum quantificante, copulatus ad eundem terminum communem ad quem pars corporis; ut docet Aristoteles. Est tamen alterius rationis quam profunditas. Ideo non obest
30 illam coextendi cum profunditate sine compositione aliquius 3ⁱⁱ; nec possit moveri, nisi eadem distancia in numero possit maiorari et minorari. Differo autem a solutione argumenti quo probatur quod, mundi moto recte versus oriens, moveretur quilibet situs eius, quousque probatus fuerit casus assumptus. Sicut ergo res
35 universalis est immobilis, sic et locus.

2. Some forms are individuated by their immediate subject, others by a subject that is remote, others by something extrinsic, yet also belonging to the subject; as in this last case.

3. God Himself cannot make two different places to coincide; but two bodies may coexist in a third, and yet have all their points separate.

Site is thus a quantity by itself and motionless: by itself, since nothing else gives it quantity;

and motionless; for the argument proving that if the world were moved in a straight line, its site would be moved, assumes what is impossible. Definition of place. Gilbert de la Porrée's definition takes a wider view; but Aristotle implicitly says the same.

Unde descriptive locus est *quantitas continua, immobilis, permanens, qua corpus formaliter est locatum*; licet auctor sex principiorum extendat locum ad omnem locacionem substantie sive punctalis sive corporee; Aristoteles autem, 4^o Physicorum, vocat locum *ultimum*

12. singularis (!) B.
39. a^{or} B.

30. 9pōē B.

31. v' nec in marg. B.

corporis continentis immobile primum; quod intelligitur de agregato ex superficie concava locantis et respectu ad predicta principia loci. Illud enim immobile, et non ultimum convexum corporis locantis, sed ultimum concavum quod est primum et immediatum continens. 5

Partial site is founded on universal site. Site differs from situation

Ex istis patet quod quolibet pars situs mundi est situs fundatus in communi ad quamcunque partem mundi sic positam. Et per consequens tam quolibet particularis situacio quam universalis situacio mundi partis, est alterius rationis quam situs qui est locus. 10 Et notandum quod propter istam differenciam habendam credo quod hec nomina situs et situacio inventa. Omnis enim situacio partis mundi causatur a situ; quia quolibet tale *ubi* causatur a loco; quod idem est. In mundo tamen et primo subiecto situs idem est situs, posicio, 15 et situacio.

not only in form, but in sense: site causes situation.

However, in the universe, the poles and the centre, site and situation are identical.

Six differences of position: up and down, for length: right and left for breadth: before and behind, for depth.

These are absolutely unchangeable in the world and in perfect animals.

There are also other positions relative to different parts of the world. As anything is more distant from the centre, it is higher, and lower as it is farther from the circumference of the universe. Nothing can be above the circumference, nor below the centre.

Et sic sunt sex differencie loci vel posicionis mundi: scilicet, *sursum* et *deorsum*, que sunt termini longitudinis; *dextrum* et *sinistrum*, que sunt termini latitudinis; *ante* et *retro*, que sunt termini profunditatis. In mundo 20 autem et quolibet animali perfecto sunt iste sex differencie quorsumcunque ubicantur absolute fixe. Et in aliis dicuntur comparative. Unde, ymaginato homine cuius capud sit in polo antarctico et pedes in polo arctico, manus dextra in oriente et sinistra in occi- 25 dente; tunc posicio illius hominis corresponderet positioni mundi.

Sed preter istas posiciones est dare alias posiciones parcium mundi respectu sui centri: ut res est eo superior in mundo quo 2^m se vel aliquid sui est distancior 30 a centro, et eo inferior quo 2^m se vel aliquid sui | est B¹⁰¹ distancior a circumferencia mundi. Ex quo patet quod non est possibile centrum esse supra aliquid vel inferiorius quam est, nec circumferenciam mundi esse inferiorem vel infra aliquid, aut superius quam est. Unde false 35 fingunt quidam ponentes deum posse rarefacere mundum in infinitum vel condensare versus centrum, aut movere ipsum motu recto, nisi forte equivocando intellexerint quod ipse habet potenciam ad hoc, *si posset fieri*; sicut ego possum videre bestiam mortuam, ipsa 40

12. sit² B. 22. v'ca^v B. 34. circumferencia B *ib.* inferior B.

21. *Animali perfecto*. Because it is able to *perceive* what is before and what behind, &c.

obiecta michi. Res autem multiplicatas non repugnat esse supra se vel sub se; et sic de ceteris differentiis, cum tunc sit res multiplicata localiter, quando complete est per diversa loca, sicut deus est indivisibiliter ad omnem punctum mundi, et anima ad omnem punctum sui subiecti. Proprie autem multiplicatur commune in suis singularibus, cum sit eorum singulum; ut punctus communis multiplicatur per totum mundum; et sic, quantum possibile est aliquid extensive multiplicari.

As for beings multiplied in space, they can be both above and below themselves; as God, the soul, and universals, v. g. the universal idea of a point. But their individuals cannot be thus really multiplied; though an individual substance can be multiplied sacramentally.

15 Ex istis patet quod mundus non simpliciter sed 2^m suas partes est suprema res et infima possibilis. Sed videtur michi quod superficies extrema mundi sit alcior ipso et extra ipsum 2^m situm indivisibilem, nisi pars mundi superficialis subiectet illam, et per idem centrum 20 mundi esset inferius quam aliquod permanens continue magnum. Et sic de cuiuslibet corporis termino. Non enim foret substantia superior vel inferior propter eius accidens terminans, si ipsum non subiectetur in aliqua eius parte potius quam propter bonitatem, vel alia 25 eius accidencia, quantumlibet distancia, aut propter talem terminum per se existentem in eodem situ quo infimo non continuatum cum terminato.

Thus the universe is in one place the highest and in another the lowest possible thing. I think that the circumference is by one indivisible point higher and beyond the world itself: so also of all surfaces.

Sed pro aliis 4^{or} differentiis notandum quod omne animal absolute habens istas diferencias habet 3^s lineas dimensionales orthogonaliter se secantes in medio; et sex medietates concomitantes divise per tales tres lineas obiciuntur sex differentiis positionum, sic quod quilibet extra medium talis animalis inter tales lineas, quantumlibet protractas, est comparative dextrum vel sinistrum, 35 et cetera, huiusmodi animali. Et sic conclusio patet quod stat idem non multiplicatum esse sextupliciter positum quo ad diferencias animalis; ut idem est dextrum michi, ante me, et supra me etc.; sicut patet de toto residuo mundi extra me. Nam circulare est maxime

Every animal that has these positions has three dimensions that intersect at right angles in the centre of its body, and six corresponding halves, upper, lower, &c. Thus the same thing can have six different positions at the same time relatively to that animal;

24. b^{om} B.27. quom^o B.34. p^{tas} B.37. d^s al B.

27. *Infimo*. The word might read *in summo*, without the sense of this sentence being cleaver or the reverse. When I copied the MS. I found the word was most like *insivero*.

as for instance,
the universe
and God.

To the *right*
may signify
either
absolutely so,
as a line
produced to
my right hand
until the
circumference
of the world;
or simply so;
as a thing of
which no part
is to my left;
v. g. one half
of the universe;
or partly so;
as a body that
surrounds me.
The right half
of the universe
is *partially*
above, below,
before and
behind me:
while it is
simply to my
right.
There are only
two absolute
positions of a
thing.
Sophists
say that a
thing cannot be
called *above me*
unless it be
above in all
its parts.
According to
them, *to be*
above means
to be higher
than.
But if any
part of A is
above the
whole of B,
then A is
above B
according to
that part.
Thus a man is
not above
himself, though
his head is
above his body.

proportionatum esse multipliciter positum respectu animalis, sicut et deus est maxime denominatus taliter respectu diversorum quo aliquid potest esse. Nam si aliquid causatum habuerit dextrum, sinistrum etc.; tunc deus est sibi dexter, sinister etc. 5

Ex quibus colligi potest quod tripliciter dicitur ad dextrum; primo modo summe dextrum; sicut est quilibet punctus lineae dextralis, et omne quod 2^m se totum est ad talem punctum. Voco autem lineam dextralem B 102 que protenditur versus dextrum usque ad finem mundi 10 orthogonaliter correctam super lineam longitudinalem. 2^o modo dicitur ad dextrum simpliciter quod sic est dextrum quod nulla eius pars est non dextra, sicut est medietas mundi et quilibet 2^m se totum in illa respectu mei. Et 3^o modo dicitur dextrum 2^m partem; ut omne 15 corpus circumdans me, et sic de aliis differentiis etc.

Ex quibus patet quod stat simpliciter dextrum esse quintupliciter positum respectu animalis; quadrupliciter 2^m partes, et 5^o modo simpliciter. Nam medietas mundi est simpliciter dextra michi, et est supra me, sub me, 20 ante me, et retro me; licet partialiter. Sed solum 2^r dicitur aliquid alteri summe positum; ut idem est michi summe dextrum et summe sinistrum; ut patet de puncto terminante lineam dextralem.

Scio tamen quod multe sunt altercationes sophisticæ: 25 ut unus dicit nichil esse supra me, nisi 2^m se totum fuerit supra me; et sic mundus nec est supra me nec subter aliquid; quia sequitur penes eos: A est supra B; ergo, A est superius quam B; quia aliter capud hominis esset supra ipsum; et sic esset corpus supra se, sub se, et ita 30 de aliis differentiis. Pro istis alteracionibus suppono quod omne supra aliud est esse 2^m se vel aliquid sui in situ, qui est situ adequato inferioris superior; et sic homo non est supra se, nec aliqua pars quantitativa rei est supra vel sub suo toto; et sic de ceteris differentiis, 35 ut patet ex diffinitione *quid nominis* supra dicta. Sed non video quomodo posset dari quam alta vel quam profunda foret res, nisi ratione sue partis altissime aut profundissime. Unde res 2^m aliquid sui alcior quam

1. atis = animalis? B.

11. errcam B.

16. 2^o *pro* differentiis B.

18. affs B.

22. alr^r B.

36. *Quid nominis*. A verbal definition, that merely explains what is meant by a given word.

reliqua 2^m aliquid sui dicitur esse supra reliquam, et ipsa superior. Et correspondenter de aliis differenciarum denominacionibus. Sed non oportet, si aliqua pars date significat aliqua parte alterius dande superior, eciam quod exinde sit prima res superior. Sed oportet capere denominaciones huiusmodi 2^m supremum vel ultimum talis denominacionis. Ex quo patet non sequitur, si A sit supra B, quod B sit sub A, ut patet de homine et corde suo; et proporcionaliter de aliis
10 consequenciis.

But if A is above B it does not follow that B is below A.

Sed relinquendo ista sophistis et redeundo ad conclusiones priores, patet quod omne absolute habens istas denominaciones habet sex medietates communicantes, quarum quilibet continet 4^{or} medietates comunicantes 4^{or} parcium aliis denominacionibus subiectorum; ut illud quod est primo sursum in animali continet medietatem partis dextre, et sic de parte sinistra, de parte anteriori et parte posteriori; et sic de aliis medietatibus. Nam ad omnem punctum sic positum
20 continentur quinque denominaciones; et ad medium punctum exclusive concurrunt sex posiciones predictae. Sed medius punctus sic positi non refertur aliqua istarum 6 denominacionum respectu illius positi, sicut nec centrum respectu mundi. Nam medietas inferior mundi
B 102^b est ab equinocciali | usque ad polum articum, et alia medietas incommunicans cum illa est pars superior eius; et medietas mundi a Colubro usque ad polum orientalem est pars dextra mundi, et alia medietas incommunicans est pars sinistra. Medietas vero ab oriente
30 usque ad cenit habentibus speram rectam est pars anterior; et relicta est pars posterior.

The upper half of any animal contains (partially) the right, the left the fore and the hind halves;

for at every point of its extension we find these five positions, while the centre, being their starting point, has none of them.

The lower half of the universe extends from the equinoctial circle to the arctic pole and the other is the upper half; and so on for the other divisions.

Ex istis patet quod *sub* et *supra* in mundo sunt equivoca. Nam aliquando dicunt altitudinem et bassitudinem, ut supra dictum est, et aliquando dicunt absolute positionem mundi. Et sic polus articus dicitur summe subditus in mundo; bassissimum tamen et infimum possibile ad sensum expositum est centrum mundi. Unde, solum in mundo vel concentrico cum mundo, est idem

Above and below may indicate mere height and depth, or absolute position in the world. *Innermost* and *bottommost* are identical only,

5. ze' pro eciam B. 13. metes B. 14. metes B. 17. met; B.
19. media^{b9} B. 20. et ad B. 27. coluro B. 33. al^h B. 38. fo^m B.

25. *Equinocciali*. This may be a mistake for the Equator.
27. *Colubro*. The constellation of the Serpent. 30. *Cenit*. The zenith.

for spheres
whose centre
is that of the
world.

All these
positions
admit of
inequality
amongst
themselves,
and also a
maximum of
each kind.
Every place is
equal to the
greatest
quantity that
can be placed
in it.
Place gives
dimension to
the thing
placed, and
receives its
dimensions
from it:
it receives
dimension
formally from
the quantity
that exists;
and it gives
dimension as
an efficient
cause, though
not as an active
one; it merely
is that by
which its
subject has
dimension.

Position,
dimension and
shape are
almost identical
terms as
concerns the
world, but they
differ as regards
themselves, and
are in each
other

in three
different ways:
as the effect in
its cause,
as the cause in
its effect,

esse infimum et intimum. Nam generaliter centrum rei est eius intimum, quia maxime intra illam. Sed non in eccentrico est centrum maxime infra, quia tunc nichil esset eo inferius. Non ergo est infimum.

Ex istis patet quod iste difference posicionis sustinent magis et minus, et quod est dare summum vel maximum possibile in tali denominatione: ut summe dextrum, summe sinistrum, etc. Patet etiam quod omnis locus est equalis suo maximo locato et adequato; et per consequens mensurat ultimum gradum magnitudinis locati. Sed hic est dubium quomodo locus quantificat locatum et est in illo, cum idem locatum quantificat locum. Sed dicitur quod multum equivoce dicitur aliquid quantificare aliud, et esse in illo. Aliquid enim quantificat aliud efficienter, sicut deus quantificat omne quantum, et corpus continens quantificat suum contentum, sicut et locus. Sed quantitas, que est dimensio, formaliter quantificat subiectum suum et efficienter requantificatur ab eodem. Unde situs non est formaliter subiective in aliqua parte mundi, nec formaliter illam quantificans, nec ab illa quantificatus. Sed locus ponitur per accidens efficienter quantificare suum subiectum locatum, sicut est generati principium, quamvis non sit de genere activorum. Aliud enim est facere et aliud agere. Oportet ergo omnem locum corporeum coequare sibi suum locum; et de tanto habet locus rationem forme quod ponit locatum in suis limitibus quo ad quantitatem et figuram.

De loco vero mundi, videtur quod sit valde propinquus sue dimensionis et figure. Differunt tamen ab invicem, cum quelibet pars quantitativa loci mundi differt a parti quantitativa dimensionis vel figure sue. Nec est inconveniens, sed necessarium, quod aliqua reciproce se quantificent in diversis generibus causandi; et taliter sunt reciproce in seipsis. Unde licet in 5^o philosophorum dicatur aliquid esse octupliciter in alio, tamen tripliciter 2^m genus unum potest dici in alio. Primo modo, sicut causatum in sua causa; et taliter omnis forma est in suo subiecto tanquam in causa suscipiente denominationem. 2^o modo omnis causa est in suo causato, et omne subiectum forme est in illa forma:

1. infinitum B.

3. in eccentrico B.

23. quanti B.

ut homo est in substancialitate active vel passive, et ignis in igneitate, homo in humanitate; et sic de aliis similibus. Et 3^o modo dicitur in alio sicut in suo extrinseco continente, ut liquor in vase. Et hec dicta
5 pro presenti de loco sufficienti. }

B 103^a Habita noticia de loco, incidit pertinenter tractare de motu locali, cuius materia est locus; et contingenter de aliis. Sed incipiendo a priori, supponatur quod motus in communi sit actus vel forma quo mobile formaliter
10 movetur. Et est duplex, scilicet *subitus* et *successivus*. *Successivus*, ut *motus localis*, *alteracio*, *augmentacio*, vel *diminutio*; et *subitus*, ut *generacio* vel *corruptio* substancie. Et patent descripciones istorum.

Motus autem localis, quo ad eius principium subiectivum, dividitur in motum *per se* et motum per accidens. Quamvis autem impossibile sit aliquid moveri, nisi moveatur per accidens, tamen ad propositum restringitur motus per accidens ad motum localem, sine eius *per se* existencia vel sufficiencia ad replendum
20 locum: ut forme dilate cum subiectis motis, et quecumque partes quantitative. Sed *per se* movetur localiter quecumque *per se* substancia corporea que ex inclinacione eius intrinseca movetur, ut corpora.

Et hoc dupliciter; vel concomitante violencia ab
25 extrinseco, sicut est in pulsione, traccione, veccione, et vertigine; vel sine violencia, ut est in motu celi et ut creditur in elementis motis ad sua loca naturalia cum iuvamine removentis medium prohibens et influencia celi que generavit elementum et dedit sibi talem appetitum. Probabile tamen est quod omnis motus localis istorum inferiorum est cum violencia; ut aliquod corpus movetur sine quadam naturali inclinacione.

Sed *per se* motorum aliquod movetur *per se et ex se*, ut animata que possunt principiari motus suos sine
35 motivo extrinseco simul existente cum illis; et hoc vel sine aliquo motivo extrinseco, ut homines et celum (si sit animatum), vel cum movente obiective extrinseco apprehenso; sicut animalia. Inanimata autem mota naturaliter *per se*, cum quieverunt, non habent de se
40 sufficienciam ad inchoandum motum; ut lapis non

or as the contents in that which contains them.

From the consideration of place, we pass to that of local movement.

Definition of movement in general.

It is divided into instantaneous (generation and dissolution) and successive (local movement, variation, increase, and diminution).

Local movement is either substantial (as that of a substance) or accidental (as that of an accident).

Substantial movement is violent or natural

(and all movement here below is probably more or less violent).

Self-proceeding (either self-determined or not)

or proceeding from an extrinsic cause.

1. hō B; ib. fāi¹⁰ B. 5. After sufficient a blank space for 4 words B.
19. exñ^a B. 23. cor^u B. 28. influencie B. 38. mōlia B.

surgit post quietem, sicut facit bestia memorans obliti sempiternaliter immutantis. Semper tamen ab influencia celi vel alio sempiternaliter movente moventur mutabilia nota; ut patet de motis ad generandum sibi simile in certo tempore anni, vel prosequentibus delectabile aut 5 fugientibus tristabile. Homo autem, cum anima sua non subiaceret necessitata motibus astrorum, potest movere se localiter contra inclinacionem extrinseci. Ideo celum et homo perfecte possunt moveri ex se. Et movencium se quedam moventur 2^m se tota, quedam sunt subiecta 10 prima motus, et quedam 2^m partem, ut mota quorum partes quiescunt.

Some bodies are moved as wholes, some as subjects of movement, some as parts of wholes.

Nothing can be moved locally, unless it be moved by something else.

It is either a body or an indivisible being; if the first it is either moved from without, or from some part of itself which itself requires to be moved by something else. If the second it is moved against or beside or according to its nature.

This proves that there is a First Mover of all things, motionless, indivisible, eternal.

The sky moves, and it is finite: both are certain truths. The superior parts of the sky move those below, and not vice versa.

Ex istis divisionibus bene notatis patet quod impossibile est quicquam moveri localiter, nisi ab alio moveatur. Si enim sit corpus quod movetur, tunc vel mo- 15 vetur ab extrinseco et sic ab alio; vel a parte eius mota, cum impossibile est signare totum mobile motum, nisi pars eius per suum motum faciat totum moveri, eo quod talis pars sufficeret per se denominare totum moveri, et non stat illum parcialem motum subduci, 20 nisi vel totum non moveatur vel alio motu moveatur. Ideo certum est quod motus talis partis | est causa B103^b quare totum movetur, et per consequens totum movetur ab alio. Si autem indivisibile moveatur, vel violente aut per accidens movebitur (et sic ab alio), vel ex naturali 25 inclinacione, et per consequens gracia alicuius finis, et sic ab alio.

Et ex istis, cum paucis addendis, concludi potest quod est dare primum motorem immobilem, indivisibilem, et eternum. Supponendum enim est ex sensu 30 corpora celestia moveri localiter, ut patet de astris. 2^o supponatur [quod] totum agregatum corporum motorum, sicut et totus mundus sit causatum finitum; quia, si esset infinitum, nichil potest ascendere vel descendere, cum non esset aliqua differentia loci supra- 35 dicta. Omnes enim ille difference supponunt medium. Istud patet de spera corruptibilium mota a celo, et de parte celi inferiori mota ab eius parte superiori, et non econtra; quia tunc moveretur celum valde difformiter quo ad tempus propter diversitatem motorum, 40 et esset mutua dependencia in eodem genere causandi,

2. spua^r ī mut^o B.3. spna^r B.

3o. ex B.

32. quod deest B.

et per consequens idem prius se ipso. Istis suppositis, patet quod est dare corpus ultimum motum ex 2^a suppositione; et illud movetur ab alio ex conclusione, sed non a corpore inferiori ex proxima suppositione; ergo
5 a motore eque primo vel priori dato mobili. Et illum oportet esse primum motum, sicut suum mobile est primum mobile.

There must, therefore, be a first mobile; and this first mobile is moved by another.

Hic potest fingi quod primus motor est forma extensa primi mobilis; vel 2^o quod spera superior movet
10. inferiorem, et econtra propter concathenacionem eorum 2^m concentricitatem vel excentricitatem; vel 3^o quod eiusdem orbis quilibet pars moveat aliam, sicut est de trocho circumducto, qui eternaliter moveretur, si non impediretur a corrumpente, nec ab extrinseco collidente
15 nec ab appetitu quem forma habet ad quiescendum. Cum ergo ista non possunt fingi in celo, videtur quod ad perpetuitatem motus celi non oportet ponere intelligentiam moventem, et per consequens non alium deum a corpore celesti.

It may be said that the First Mover is the form of the first mobile coextended with it, or that the inferior bodies react upon the superiors, or that one part of the world turns another like a top that would move for ever, were it not for friction.

20 Omnia ista tolluntur per hoc quod celum regulariter difformiter movetur, ac si esset unum proportionaliter motum; quod nulla trium viarum potest solvere. Nec est philosophicum ponere talem violentiam in celo. Sed 3^o tolluntur dicte ficticie per [dicta] alibi. Probatur
25 quod oportet totum genus cause materialis esse propter causam formalem, et totum genus cause formalis esse propter compositum quod est per se efficiens; et totum genus talium oportet esse propter causam finalem; et sic primam causam oportet esse causam finalem et non
30 corpoream, quia tunc dependeret a partibus et haberet causam ipsa priorem. Omne ergo corpus habet finem ipsum limitantem, gracia cuius est sic activum, cum non potest esse tam ordinatus motus nisi ab ordinante preter corporeo, quem oportet perfeccius cognoscere
35 suum ordinatum quam homo suum ordinatum, sicut operatio nature est perfeccior operatione artis. Corpus ergo primum, cum non 2^m se totum ordinat, habet aliquid in eo quod ordinat alia, quod non potest poni corporeum propter eius operationem et perfeccionem.
40 Est enim perfeccius primo corpore, cum sit finis ordinans ipsum et omnia alia ordinata; et per consequens

So God is not necessary.
Answer. All these subtrefuges are met by the fact that the sky moves regularly and yet not with a uniform movement; for which they cannot account. The first cause cannot be extended; it would depend on each of its parts, and be caused by them. Matter cannot direct itself to its own end; there is therefore one who directs it, and who is not matter, nor form, nor having quantity.

13. troco B.

24. dicta *deest*.

28. tlim B.

34. cor^{eo} B.

Immovable and
cause of
eternal truths,
God is also
eternal.

nec est eius materia, nec forma, nec pars quantitativa. Est ergo indivisibile. Et cum non possit | moveri ab B 104^a alio, patet quod sit immobile, et cum sit prima causa et necessario sint veritates eterne, patet [quod] est eternum, sive mundus incepit esse, sive non. 5

Aristotle's view
on this subject
is distasteful
because of his
strange
terminology
and vague
hypotheses.

Sermo autem Aristotelis in ista materia est multum insipidus propter extraneitatem terminorum et suppositiones multas incognitas. Certissimum tamen est philosopho quod, extra totum mundum et totam multitudinem causatorum, oportet dare causam illius totius 10 multitudinis, quia aliter esset causatum sine proportionali causa. Nec possunt esse multe tales cause finales illius multitudinis eque primo causantes, quia tunc multiplicarentur gracia speciei prioris et causantis eadem, sicut patet ponentibus universalia. 15

The
philosopher can
have no doubt
whatever as to
the necessity of
admitting one
First cause of
all.

Movement is
either *simple*
or *compound*;
simple when it
is one natural
movement of
any physical
thing;
compound,
when it
proceeds from
a vital
principle:
as walking, &c.

Secundo autem dividitur motus localis in comparatione ad eius puncta et materiam in ipso aquiribilem; ut alius est motus *simplex*, et alius est motus *compositus*. Simplex autem in proposito vocatur motus naturalis, homogenius, corporis naturalis; et motus compositus 20 est motus competens animato a forma superaddita; ut progressio, repcio et volatus competunt animali. Et istos motus comitantur multi motus diversarum specierum et multe quietes. Ideo totum agregatum vocatur motus compositus. 25

Simple
movement is
straight or
circular.
The latter alone
is believed to
be perpetual,
and is the most
perfect
movement that
is possible to
matter.

Motus autem simplex quidam est rectus, ut ascensus et descensus, 2^m divisionem gravium et levium; et quidam circularis, ut motus corporis. Neutri perpetui: solum enim talis motus creditur esse perpetuus. Ideo principalissime competit corpori circumferri perpetuo, 30 propter proporcionalem perfeccionem. Quod si aliqua pars orbis celestis ascenderit vel descenderit, hoc erit 2^m proporcionem circuli, et propter inclinacionem alterius cui inexistit, et non propter situm alcioem vel bassioem in quo appetit quiescere, sicut gravia et levia. 35

To circular
movement there
is no contrary;
it can coexist
with upward or
downward
movement,

Unde, 2^m philosophos, motus circularis non habet motum sibi contrarium, quia motus circularis potest per totum inesse corpori moto per totum ascensum vel descensum. Ideo non contrariatur illis, cum eidem

4. quod *deest* B. 17. pu^{ca} B; *ib.* aq'ri^{em} B. 20. u^m after corporis B.
30. pu^{me} B. 32. cor^{is}; orb above B.

subiecto primo possunt isti simul inesse. Et 2^m astro-
nomos, motus circularis ab oriente in occidentem com-
patitur secum per totum subiectum sic motum, alium
circularem motum ab occidente in orientem; et multo
5 magis alios motus circulares super diversos poles. As-
census autem et descensus contrarii sunt; quia sunt due
species motus quas impossibile est idem singulariter
per se motum simul et semel subiectare primo. Nam
stat multipliciter simul tempore ascendere et descendere,
10 sicut et corpus non multipliciter 2^m partes, sed non
simul per totum. Unde, 2^m philosophos, non solum 2^m
terminos contrarios sed penes intencionem finis penes
motum medii et motus quibus adquiruntur illi termini,
attenditur, motuum contrarietas. Nec sequitur ex istis
15 tunc motum circularem esse perpetuum, sed potius
probabiliter infert oppositum, cum motus celi non sit
solum propter finem habitum placendum, sed propter
finem habendum, ut perfectionem universi in produc-
tionibus animarum; et cum hoc non possit procedere
20 in infinitum, philosophis est ponere quod aliquando
cessabit motus celi.

Sed pro specificatione motuum sunt 3^a notanda. Primo
quod aliquis est *per se* terminus ad quem motus, et
alius non *per se*. Per se terminus motus est denominatio
25 accidentalis quam oportet mobile ut sic motum ad
B 104^b quirere] et in fine motus habere ut ubicatio localiter
moti. Terminus autem ad quem, sed non *per se* ter-
minus motus, est quecumque forma que in fine primo
habetur a moto, quam non oportet ipsum formaliter
30 acquirere tanquam principium sui motus, sive insit
extrinsece et non formaliter ut locus, sive intrinsece
et formaliter: ut sanguis post laborem; et quodlibet
contingit esse tales terminos accidentales motui. 2^o no-
tandum quod de motu, sicut de aliis naturis, contingit
35 aliquas esse per se species, et alias species per accidens;
que quidem species sunt capte ab accidentibus separa-
bilibus ac inseparabilibus; ut multe sunt species religio-
sorum et tamen omnes sunt eiusdem speciei substantia-
lis. 3^o, videtur michi quod species motus naturalis vel
40 essentialis maxime attenditur penes materiam motus;
et per consequens penes *per se* terminum ad quem, cum

and circular
movement from
east to west
and from west
to east may
also coexist.

But ascent and
descent are
contrary.

Not that the
same body
cannot ascend
and descend at
the same time;
but the same
body as a
whole, cannot.

Yet though
without a
contrary,
circular
movement is
probably not
eternal; it is
for an end, and
that end
attained, it will
cease.

Three points
must be
noticed here.
1st That the
terminus of
any movement
is so either by
itself or not;
i. e. a terminus
to attain which
the movement
is made;
or one which is
attained, but
which was
not the
principle of the
movement.

2nd There may
be essential
and accidental
species of
movement,
according as
they are
distinguished
by something
essential or
accidental.
What
principally
specifies
a movement is
its proper and
essential
terminus.

10. mltr' B.

20. phic B; ib. al η B.

32. fauis B.

Movements may thus be essentially of the same species, while they differ accidentally.

omnis talis sit eiusdem rationis cum materia primo adquisita. Ex quo patet quod adquisicio materie, ascendendo vel descendendo, circulariter vel recte, naturaliter vel violente, licet principient motus disparium specierum per accidens, non tamen species naturales. Et patet 5 quomodo contingit motus esse eiusdem speciei naturalis et disparium specierum per accidens; et contingit motus convenire ac differre 2^m plus vel minus de talibus speciebus.

Objections.

1. The same sphere cannot move eastward and westward in its entirety; for while v. g. the part above the horizon turns eastward, the part below must turn westward.

For different horizons, every part of the sky is rising or setting; so it matters not whether we say it moves to the east or the west; and thus any point is east and west at the same time.

And thus the East moves towards the West; which is inadmissible.

3rd It is confusing to say that anything moves towards a point of the compass, since the whole sky, except 4 points is at once east, west, north and south.

For instance, every point in the sky, except the antarctic pole, is more or less to the north.

Sed obicitur, probando quod non sit possibile eam- 10 dem speram moveri per totum ab oriente in occidens, et econtra. Iam primo videtur, data possibilitate quod omnis orbis celestis movetur; quia si pars supra horizontem movetur ab occidente in oriens, sequens est quod pars sub horizonte movetur econtra ab oriente in occidens: 15 et econtra. Ergo totus orbis eque movetur 2^m partes versus oriens sicut versus occidens; et econtra.

2^o. Sicut qualibet pars orbis celestis oritur et occidit continue respectu diversorum orizoncium: ergo non refert ponere ipsum moveri versus orientem aut 20 versus occidentem. Ymmo quilibet punctus est tantum per instans oriens vel occidens; et cum nullus punctus attingat alium, sequitur quod oriens non movetur versus occidens, quamvis oriens infinicies erit occidens. Quilibet ergo punctus in equinocciali, si movebitur versus 25 alium, continue movebitur versus quemlibet alium; et sic continue movebitur versus occidens, versus meridiem, et quemlibet punctum equinoccialem cuiuscunque difference. Et illud sequitur ponendo istas diferencias fixas.

3^o. Quilibet punctus in celo preter 4^{or} est orientalis, 30 occidentalis, borealis et australis: ergo, non est nisi confusio dicere quod mobile movetur versus talem differenciam, cum non sit talis differencia fixa. Maior probatur per hoc quod in relativis tenet consequencia a comparativo ad simpliciter; sed quilibet punctus celi 35 preter polum antarticum est in comparacione ad ipsum borealis; ergo quilibet punctus preter ipsum est borealis. Et sic de 3^{bus} aliis punctis iniciantibus 3^s alias plagas. Non ergo opponuntur terra borealis et australis, sed pocius relative convertibilia [sunt]. 40

4. pu^{ent} B. 28—29 c9c3 dric B. 35. 9° B. 36. ergo vro est B. 40. sunt deest B.

- 4^o plus accedendo ad mentes loquencium, videtur quod nulla spera inferior movetur versus oriens, quia est impossibile moveri aliquid continue versus terminum fixum et recedere continue ab eodem. Sic enim contingeret muscam ascendere repente ab uno extremo lancee in aliud per hora, illa lancea 2^m se tota descendente per eandem horam velocius in qualibet proporcione signabili; et sic motus ascensus et motus descensus contrarii inessent eidem subiecto primo.
- 10 5^{to}, sic. Si planeta motu proprio precise tam velociter moveretur, sicut rapitur per orbem superiorem, tunc non moveretur; ergo multo magis nunc non movetur. Antecedens patet, quia tunc continue foret in eodem loco; ergo non moveretur localiter. Si enim mobile moveatur propter nisum suum, non adquisita materia motus, tunc omnis lapis vel grave mixtum continue moveretur versus inferius. Sed quid incredibilis de columpnis et aliis quiescentibus quam quod descendant continue?
- 20 6^{to} sic: si motus remissior inedit aliquid relinquit, motus intensior plus impediret, et motus equalis simpliciter impediret. Sed motus orbis planetarum impediret motum raptus, cum longe velocior foret, illo subducto, quam est modo. Ergo motus simpliciter pares simpliciter se impedirent. Ergo multo magis motus raptus, adeo velocior motu proprio inferioris orbis, simpliciter impedit illum. Quilibet enim planeta tanto citius describeret circum suum circa terram quam modo facit, quantum est talis ortus porcionis circuli quem describit in die motu proprio sui deferentis: ut sol in anno solaris frequentius quam modo circumrotaretur per unum diem. Et alii planete per plus vel minus 2^m proporcione velocitatis sui deferentis. Et hoc videtur mirabile multum, quod mobile multum velociter movetur versus terminum fixum, et tamen, subducto illo motu, et quocunque supplente vicem eius, citius veniente ad terminum suum quam modo facit: ut sol in occidente existens citius veniret ad terminum suum quam modo facit; ut sol in occidente existens citius veniret ad orientem subducto proprio motu, cum per motum raptus

Nothing moving towards a fixed point moves away from it; thus none of the inferior spheres moves eastward. Otherwise if a fly crawled up a lance that descended at the same time the same being would have two contrary movements. 5th. A planet does not move so fast as its sphere does in a contrary sense; but if it did, it would then *not move at all*. There can be no movement without change of place. 6th. A slower movement of one part hinders the rest; a movement equally fast in a contrary sense would stop it. But then the movement of the planetary sphere, being far swifter, must destroy it entirely. If so, the sun ought to revolve round the earth one day oftener than it does; so of the other planets, if their movement is destroyed. Which seems astounding.

15. adq^{ta} B. 16. 1^p B. 29. ts B. 30. d^{int} B. 33. d^{int} B.
34. multum *in marg.* B.

Thus the sphere has no power of hindering any planet from actually moving.

To say that local movement is merely change of site on the superior sphere, not real change of place, is false.

General answer.

Logically speaking, this cannot be called movement.

But it is equivalent, as regards astronomy; there is a tendency in each planet pass on to a different

sign; it matters little whether this be called movement or no.

If we extend the meaning of movement, we shall include actual change of place, tendency, change of position on a surface, delay, &c.

1. The conclusion of this argument is probable; every part of the celestial sphere moves towards all the points of the compass.

quam modo faciet. Non ergo habet illud rationem motus quod impedit eius subiectum adquirere eius materiam. Nec valet dicere quod descriptio concavitatis orbis superioris et non adquisicio situs sit motus localis orbis planete; quia talis descriptio non est motus, sed acciden- 5 taliter concomitatur motum; ut, si quis applicaret cultellum quiescentem ad lapidem molarem circumductum, quo usque tota superficies extima lapidis sit descripta, talis descriptio non est motus. Ergo per idem nec retrogradacio orbis inferioris nec descriptio sue concavitatis. 10

Pro isto videtur michi quod logice negandum est tales motus esse. Equivalent tamen quo ad conclusiones astronomi et finem quem intendit de uno loco et operatione astri in ista inferiora; sive ponatur talis nisus esse motus, sive non; quia verisimile est quod quilibet orbis 15 planete habet nisum ut sit sub orbe signorum continue dispariter suppositus, saltem 2^m | planetam suum; ex B 105^b quo nisus defeccio supponitur, modo quo convenit celesti horologio. Aliter enim planete non possent diversimode esse in signis diversis celestibus, sicut experti sunt esse. 20 Unde, sic ampliando motum, contingit idem corpus habere quotlibet motus distinctos specificice; ut luna dicitur habere quinque motus, preter duos motus communes omnibus planetis, et quotlibet alios motus contingit ymaginari lunam habere in ymaginatione per 25 diversos orbis motos super diversos polos. Istud tamen non haberet colorem, si omnis motus sit mobile. Tunc enim videndo mobile moveri, non videretur nisi precise illud quod videbatur, mobili quiescente: quod contradicit cuicunque sano iudicio. Extendendo ergo nomen 30 motus equivoce ad motum proprie dictum, ad materiam motus, et ad quemcunque modum habendi corporis propter quem ipsum aliter movetur, ut sunt nisus, descriptioes, tardaciones, vel quomodocunque aliter vocentur: respondetur ad argumenta. 35

Ad primum dicitur quod conclusio est probabilis, cum qualibet pars latitudinalis spere celestis mote sequitur ad aliam, et movetur versus oriens, occidens, et versus meridiem: et sic de infinitibus sitibus. Verumptamen, ymaginato quod est dare situs fixos, sive per totum 40 mundum, sive in ultima sphaera, ut maior pars sapientum

15. quia *pro* quod B. 20 1^{bb} B. 25. in ymaginatione *in marg.* B.
27. ca^{ie} *or* care' B.

concesserat, et patet sequi ex dictis quomodo de loco vel situ est facile respondere. Nam celum 2^m emispirium supra horizontem nostrum movetur ab oriente in occidentem et 2^m emispirium sub horizonte nostro movetur ab occidente in oriens e converso: et sicut idem ascendit et descendit 2^m partes, sic in proposito de motu ab oriente in occidentem; et econtra. Sed notandum quod *oriens* quandoque sumitur pro illo situ immobili in quo dextra pars celi creata est, et quandoque participialiter pro quocunque respectu illius oritur; et sic *occidens* nunc sumitur pro situ immobili in quo sinistra pars mundi creata est, et quandoque participialiter, pro quocunque quod occidit. Et ista equivocacione plurimum laboratur. Nam notum est ymaginanti polos mundi et axem super quem rotatur, quod alium modum movendi habet quolibet pars orbis mota super horizontem nostrum, quam haberet movendo super eadem principia e converso; quia quolibet talis pars oriretur nobis in situ quem vocamus occidentem, et paulative moveretur versus meridiem, quousque advenerit ad situm quem vocamus oriens fixum. Et proportionaliter de partibus orbis motis sub horizonte. Ideo philosophi, specificantes modum movendi celi 2^m partes sensui suo notas, ut sunt partes supra horizontem nostrum, vere dicunt quod celum movetur ab oriente in occidentem, et antipodes nostri vere dicerent quod celum movetur econtra a situ quem nos vocamus occidentem ad situm quem nos vocamus oriens; sed situs qui est nobis occidentem diceretur illis oriens: et sic de situ orientali. Ideo utrobique movetur celum versus occidentem respectivum.

B 106^a Unde non obest illud | quod ultimo concluditur. Aliter tamen locuntur illi qui ponunt tales situs fixos, et onerosius ac brigosius illis qui negant tales situs.

Ad 2^m dicitur quod argumentum est verum, cum quolibet pars orbis celestis corporee magnae oritur et occidit 2^m partes respectu diversorum. Et sic est tam oriens quam occidentem (intelligendo participialiter); et sic quilibet punctus oriens continue erit oriens vel occidentem, quia continue novo ortu et occassu instantaneo respectu diversorum orizoncium. Et sic ortus successivus componetur ex instantaneis. Nec sequitur ex argumento

But let us assume that there are certain directions that do not change. It is true that our part of the sky turns towards the West, and the other towards the East. But *Orient* may mean either east or rising; *Occident*, either west or setting.

If the world turned round the other way, every one of its parts would rise and set differently.

We say that the sky turns towards the west; the Antipodes would say the contrary; but what we call the West is the East to them. Thus in both cases the earth moves respectively towards the West.

2. It is true that every part of the sky is rising and setting for different horizons; but here *Orient* and *Occident* have the sense of participles.

9. ptic^r B.14. notu^s B.; *ib.* ymagi^u B.17. p'n^a B.

We have already postulated that whatever is above our horizon moves westward. And I admit a fixed Eastern and a Western sphere, in each of which the stars have peculiar efficacy.

Aries will thus be always in the East, and *Libra* in the West.

Thus every sign in the Zodiac moves towards every other, but never to meet; for they do not move in a contrary direction, as two bodies moving on one straight line towards each other.

It is on account of this movement that we must admit fixed directions.

3. The consequence is false we admit fixed directions; to say they are impossible, but grant something equivalent, is absurd.

Thus almost the whole sky belongs to all the four points of the compass at once.

4. The very same motion may approach

consesso conclusio deducta; quia, ut dictum est, intelligitur quod pars celi supra orizontem nostrum movetur versus occidens; quod est verum. Unde credo quod est dare oriens et occidens immobile, in quorum primo astra habent ampliolem efficaciam, tanquam partes 5 dextere, et in 2^o habent efficaciam quasi partes sinistre: sicut et signa et astra appropriata illis partibus. Unde *Aries*, quorsumcunque volvatur, est in dextera parte celi, et *Libra* in parte sinistra. Et sic conceditur quod quilibet punctus in equinocciali movetur continue versus 10 quemlibet alium. Nec frustra, etsi nunquam attingat illum; quia non hoc intenditur. Sicut ergo unus insequens alium movetur versus eum, sed non contra eum, sic est de punctis equinoccialis, qui moventur ut ponitur. Nec sequitur, si quilibet illorum punctorum 15 movetur reciproce versus quemcunque relicum, quod moventur contra se; quia solum mota motibus contrariis versus eundem situm moventur contra se: ut A et B, mota super eamdem lineam rectam versus C situm, vel super lineas rectas angulariter concurrentes ad C 20 situm. Tales enim motus sunt incomplete contrarii. Nec video quomodo aliud insequens reliquum et nunquam sibi appropinquans movetur versus ipsum, nisi sit dare situs fixos, locantes mota quibus sit sic appropinquacio. Non tamen dicitur quod idem C movetur versus C vel 25 situm in quo est, quamvis immediate ante hoc movebatur versus illum situm, et immediate post hoc sic movebitur: quia nichil movetur versus aliud localiter, nisi a quo distat. Unde probabile est dicere quod aliquid movetur versus aliud per lineam obliquam, attamen recedit ab 30 eodem dum per tempus fiet continue distancius etc.

Ad 3^m dicitur quod consequencia non valet. Unde concedo tales esse differencias fixas. Nec dubium quin negantes tales esse differencias, sed [admittentes] quod 35 equivalet ac si tales essent, intricabunt seipsos, cum nichil potest equivalere impossibili. Et sic conceditur quod quilibet punctus in celo, preter aliquem 4^{or} nominatorum est australis, borealis, orientalis, et occidentalis; ut tangitur in argumento.

Ad 4^m negatur argumentum; quia non solum per 40 diversos motus, sed per eundem, contingit aliquid movere

versus terminum fixum et recedere ab eodem, ut dictum
est proximo. Nec video quin, extendendo nomen motus
(ut dictum est), concederetur quod musca moveretur
contra lanceam; non tamen ascendit. Ideo illi motus
5 sunt compossibiles, et non contrarii; sicut sunt ascensus,
et descensus. Ascensus enim dicit adquisicionem supe-
rioritatis, et descensus adquisicionem inferioritatis, que
B 106^b repugnat simul inesse eidem subiecto primo et per se.
Nota tamen quod motum repcionis consequuntur multi
10 motus, et multe quietes organorum. Ideo motus contra
navem eque velociter contrarie motam non [est] continue
precise in eodem situ. Unde differt motus musce contra
lanceam a motu orbis inferioris contra superiorem in
hoc quod alter primorum est violentus, sed neuter 2^{orum}
15 motuum est violentus. Ymmo uterque illorum motuum
est per totum subiectum suum eiusdem rationis, et sic
non est de motu animalis repentis vel quomodolibet
moventis se contra suum deferens; quia partes eiusdem
diversimode movebantur. Unde, ad cognoscendum ge-
20 neraliter motus contrarios, satis est quod sicut motus
eiusdem generis propinqui, quorum species possunt suc-
cessive inesse eidem subiecto primo et per se; sed
repugnat quod simul sic insint. De motibus autem in-
dividuis non est cura. Unde, 2^m Aristotelem, illi motus
25 causantur penes terminos ad quos vel terminos versus
quod contrarios. Quamvis enim Sor motus versus boream,
et Plato, sibi obvians, movendo contrarie versus austrum,
moveantur ad eundem terminum, moventur sibi sub
differencias fixas contrarias. Ideo dicuntur motus con-
30 trarii; sicut Aristoteles vocat ventos contrarios qui
moventur differenter super eandem dyametrum ad diffe-
rencias oppositas. Nec obest quantumcunque locum
distantem a reliquo esse sibi contrarium, quamvis sit
quantitas; quia generalis ratio formarum est quod sint
35 eiusdem generis propinqui qui non possunt simul et
semel, sed successive, adquiri eidem subiecto primo.
Et sic omnia privative opposita vocat Aristoteles con-
traria, quia sunt forme eiusdem generis, una per se et
alia per reduccionem, qui mutuo se expellunt; et sic
40 contrariantur quecunque loca distancia. Aliquando autem
restringitur contrarietas formarum ad rationem contrarie

to and recede
from a goal at
the same time.

And, in the
case put, the
fly does not
indeed ascend
the lance, since
that means
increase of
distance from
the centre;
but it may be
said to move
against it.

The movement
of crawling is
made up of
many motions
and rests.

The movement
of the fly is
violent, i. e.

against gravity;
that of the
inferior sphere
is not so.

Again the
movement of
both spheres is
of like nature;
that of the fly
and lance is
not so.

Contrary
movements are
such as cannot
coexist in the
same subject.

They take
place where
their termini
are contrary
to each other.

Every place
distant from
another place
is contrary, in
so far as the
same body
cannot be in
both at the
same time.

They are
privative forms,
which mutually
exclude one
another.

9. r'pcois B. 11. nō or aō B; *ib.* est *deest* B.
12. *pro* differenter B.

31. *duce'* = du-

activitatis. Et talis non inest quantitativus, cum non sint de genere activorum. Loca autem, quamvis non denominant formaliter corpora individua locari, sed communia, tamen denominant efficienter corpora individua locari, causando ubicaciones formaliter denominantes. Multiplicatum ergo potest simul esse in locis contrariis, sicut et corporeum non multiplicatum 2^m partes. Sed nichil potest simul et semel per se et primo esse in locis contrariis. Et ex istis patet quod sagitta mota recte et vertigine movetur 2^{ci} motu in specie simul, 10 quia motus rectus contrariatur ei qui est econtra ad differenciam oppositam, et non illa circumduccio, sicut patet ex descriptiione motuum contrariorum superius posita.

There is an exception for multipliable beings and also for matter, that can be partially in different places, but not wholly and at the same time.

5. The argument is not good. Because there is no movement, i. e. change of place, it does not follow that there is no movement, i. e. tendency to move, whether there is or is not change of place. This sort of movement has not the same signification as 'ascent'; perhaps none have the same; and there are rests of as many sorts as there are movements.

Rest does not imply no movement at all, but it denies one sort of movement at a certain time; if the earth were simply to descend, it would rest from all other movements. If any body moves, it rests, but not *vice versa*.

Ad 5^m negatur argumentum. Nec sequitur mobile 15 non moveri localiter, etsi maneat continue in eodem situ; quia preter motum localem quem consequitur adquisicio et deperdicio situs, est dare alium qui est limitacio passiva ad intendum versus aliam differenciam, sive mobile quiescat localiter, sive non; et tali motu 20 movetur lapis et quodlibet grave violentatum a situ quem appetit continue versus deorsum. Nec est talis motus univoce velox cum motibus ponentibus mobile appropinquare fixo, sicut sunt ascensus et descensus; sicut forte non sunt univoce motus cum illis. Et cum 25 tot modis dicitur unum oppositorum quot modis et reliquum, patet quod est dare quietes tot modis dictas istis motibus oppositas | Unde, sicut stat idem alterari B 107^a et quiescere localiter et econtra, sic stat idem per totum moveri localiter et quiescere localiter multis motibus 30 et multis quietibus, sed non oppositis.

Unde falsum est quod *quiescere* includit negacionem omnis motus a quiescente, cum sufficit ad quietem mobilis quod ipsum natum sit moveri tali specie motus pro tempore pro quo non movetur illa specie: ut, si 35 terra naturaliter pure descendit in vacuo vel medio quocunque quantumlibet velociter, tunc ipsa perfecte quiescit a motu circulari vel motu violento contrario. Et sic, si corpus movetur, tunc quiescit, et non proprie

6. multi^{tu} B. 17. q̄, B. 23. v^{te} B. 25. v^{te} B.

39. *Tunc quiescit*. Because it has not *all* possible movements.

e converso, cum deus potest servare semper corpus a motu proprio, sicut potest movere celum motu despari, et facere ipsum per totum quiescere. Ex quo patet quod quies est naturaliter prior motu tali, cum sit eius
 5 perfectio, gracia cuius habendi est actus ille incompletus, quo usque veniatur ad motum perfectum. Nec oportet credere opinioni vulgari, neganti tales motus; quia vulgus non concipit motum et quietem nisi localem, propter famositatem. Unde laicus negaret tale alteratum
 10 vel augmentatum, et quietem localiter moveri; nec percipit quod alteracio et alteracio sunt species motus. Sentencia ergo vulgi est vera, cum sit naturaliter innatum illis sic cognoscere; sed aliter ampliant philosophi terminos motus quam plebei. Nec omnes philosophi ex-
 15 tendunt nomen motus ad tantum ut iam extenditur, sed solum illi qui innituntur salvare motus proprios planetarum.

We must
neither admit

nor deny as
false the
common
opinion, that
admits only
change of place
to be
movement;
the learned and
the unlearned
use the word
in a different
sense.

Unde Alpetragius, negans tales motus, putando salvare omnes experiencias per unum motum ab oriente
 20 in occidens, sed quod orbes inferiores tardantur, ratione cuius retardacionis fiunt coniuncciones et oppositiones, incidit in hoc inconveniens quod omnes planete describerent orbes parallelos polis mundi; et sic planete non moverentur in circulo obliquo, causando estatem
 25 et hyemem, eclipses et generationes tali modo quo experientia docet fieri ab illis; quia motu primi mobilis, quantum in se est, non reciperetur 2^m circulum non parallelum polis mundi, sed motus partis orbis super polos declinantes a polo mundi, facit illam partem
 30 declinare ab austro in boream, et econtra. Ut, ymaginato quod sol nunc sit sub equinocciali, et solum moveatur raptu primi mobilis, non est ratio assignanda quo unquam declinabit ab equinocciali; sed quandoque foret sol extra quodlibet 12 signorum; ut per tempus
 35 totum quo exierit a Libra quo usque redeat ad Libram. Et hoc certum est recte ymaginanti.

There is an
opinion that
denies that the
planets have
any movement
of their own,
but are merely
slower than the
superior sphere.

But this will
not hold;
for then the
planets would
describe orbits
parallel with
the equator, not
oblique, as they
do.

For instance,
the sun, being
in Libra, would
leave the
ecliptic and not
return to it
until the next
year at the
same time.

18. alpetg^m B. 35. ptem[?] pro per tempus totum B.

18. I can find no name at all answering to Alpetragius. There is, however, a certain *Albricus*, who died in 1220, according to Franklin's Dictionary. — Some words are probably wanting in this sentence; but as the sense is clear enough, it may be merely an ellipse.

We should, therefore, call movement every change produced in one body by another, which makes it in any way to differ from what it was.

Thus it is said that

'intelligences' are moved by

God to give motion to their spheres.

So are all creatures

moved by God, in every change

that they undergo.

In this sense it is said that

every motor is moved by the

mobile it touches; i. e.

friction changes it, diminishing

its power.

Yet there is no necessity for the agent to acquire any new quality; it is enough that it is determined by its object to produce or redintegrate an act.

There is a movement in the mind that elicits its acts, but they are not on that account qualities.

The movement — either of generation or of redintegration

Melius ergo est extendere nomen motus ad omnem limitationem passivam ab alio; ratione cuius limitationis dispariter se habet quo ad situm, qualitative vel quantitative. Et isto modo dicunt philosophi intelligencias moveri a Deo, tanquam amato et desiderato, 5 ad movendum active suos orbes: quod si non facerent, cum veris paribus que iam ponuntur, dependerent de bonitate accidentali, displicendo Deo. Et breviter omnis creatura movetur sic a Deo, saltem per tempus, inveterascendo, perficiendo in bonitate accidentali, vel 10 deficiendo; et tali motu dicunt philosophi omne movens phisicum communicans in materia cum suo motu quod tangit in movendo, moveri; quia non dubium quin omne tale | continue debilitatur in agendo, et sic B 107^b continue deperdit qualitatem. Non tamen oportet 15 quod intelligencia, ut sic, adquirat continue successive qualitatem. Nec oportet quod calidum calefaciendo frigeñat 2^m aliquam eius partem; nec oportet motum ab obiecto adquirere continue successive aliam qualitatem; sed sufficit quod limitetur ab illo ad accident- 20 aliter eliciendum actum vel servandum, ratione cuius est melius vel peius, vel aliter denominatum quo ad acquiendum 3^m gradum materie motus quam foret subducto limitante ad taliter apprehendendum.

Unde vane ponunt aliqui actus anime esse qualitates, 25 propter hoc quod ad illas est motus. Ad illos enim non est motus tanquam ad per se terminos, quamvis necessario omne elicitivum actus sit mobile, sicut nec est motus ad *movere* intellective; nec moverentur talia proprie, sed extensive, loquendo de motu. Quod patet 30 ex hoc quod cognitivum movetur continue ab obiecto, dum non continue noviter recipit speciem vel actum ab eo. Ideo motus quo movetur est permanens, et non consistit in successione, quamvis, pro illo instanti quo intendit elicere actum, vel generabit speciem vel servabit 35 speciem aut habitum prius receptum. Ideo tunc inceperunt tam motus instantaneus quam permanens. Unde,

7. v^{is} B.
gnat⁴ B.

32. moverit *in marg.* B.

35. epit *in marg.* B; *ib.*

35. *Servabit.* I have used the word *redintegrate*, because Wyclif seems to allude to an idea that, by a given act, is not generated but merely recalled, or as the moderns would say, redintegrated, though the sense is perhaps somewhat different.

cum non sit possibile talem actum elicited esse nisi vel generetur vel servetur qualitas illo actu, non mirum si auctores dicunt omne elicitedum actus esse mobile (subaudi motu communiter dicto, et non motu proprie dicto).

— exists only at the instant when the act is elicited.

Et si queratur de velocitate talium motuum, dicitur quod aliqui sunt non veloces cum sunt permanentes, et alii successivi sunt veloces; quod mensuratur communiter penes lineas vel materias quas adquirent sua mobilia. 2^m illos motus, si moverentur, illis non impeditis. Sed videtur michi quod pari evidencia omne mobile violentatum continue existendo in eodem situ multum velociter moveretur et breviter; quod omne mobile eque velociter moveretur sicut posset moveri in vacuo vel in pleno, cum omnibus aliis sequentibus existis. Nam si A motum contra B in 2^{pl}o tardius ipso B, intendatur motum suum quousque moveatur in 2^{pl}o velocius ipso B uniformiter moto, pro instanti medio movebitur eque velociter cum B; et tunc, continuando illum gradum motus, non mutaret situm suum. Cum ergo omne mobile naturale impeditur ne tam velociter moveat se sicut potest, videtur quod sic velociter moveretur cum impeditum non impedit a velocitate motus, ut dicit responsio. Ideo videtur michi probabile quod tales motus locales versus aliquos terminos fixos per quos non acceditur appropinquando illis, non sunt veloces, quamvis per accidens taliter sint spacia illis descripta.

It may be asked: What is the rapidity of movement, taken in this sense? Some have no swiftness, others have; and this swiftness is measured by the space they would pass through, if not hindered. A body that is kept in the same place against its natural tendency is thus in movement, for it would move faster and faster were there no impediment.

Ad 6^m dicitur quod stat motus impedire se mutuo quo ad effectus extrinsecos, causatos a motibus, sed non quo ad velocitatem vel tarditatem illorum motuum; | quia, quocunque motu signato, si foret velocior vel tardior, tunc non foret idem motus in numero, eo quod vel variaretur materia motus, vel tempus, vel utrumque. Et per consequens non impediret vel impediretur; quia non esset. Motus tamen communes possunt se mutus impedire. Unde, pro materia argumenti, videtur michi quod non propter equales motus contra se impeditur mobile moveri. Ut, ymaginato quod sol innitatur moveri tantum motu proprio, quantum orbis rapiens nititur movere ipsum contra

6. Different coexistent movements only hinder the external effects caused by them, not their respective swiftness. If they did, they would no longer be the same movements, but destroyed. If the sun went backwards as fast as its

sphere went
forwards, it
would remain
seemingly
motionless.

Both sphere
and sun would
move, but we
could not call
that movement
properly *swift*.

But the sun
would move
from north to
south with an
apparent
movement.

Some deny
that movement
is possible in a
contrary
direction to the
sphere.

But then the
sun would have
a real
movement from
south to north,
not from west
to east.

We cannot
admit that a
movement
having a
certain rapidity
would, if more
intense, have
none.

Thus I think
that eastward
and westward
tendencies
contradict each
other.

And we can
fancy circular
motions that
would be
contrary if they
existed in the
sky; but none
of the six
movements —
ascension, —
descent, &c. —
are contrary
to the circular
movement.

One thing is
certain; in the
sky there is
nothing violent.

occidens, ita quod per A tempus sit in meridiano nostro; ego non video quin uterque illorum foret motus; sed non uterque velox vel tardus, quamvis valde celeriter describeretur circulus in orbe superiori utroque istorum. Motus tamen proprio moveretur sol velociter 5 ab austro in boream, vel econtra. Ideo dicunt aliqui quod non est possibile orbem inferiorem moveri contra superiorem super eosdem polos, ita quod continue maneat idem punctus in eodem situ, et motus continue localiter. Illud tamen non placet michi, eo quod tunc 10 diceretur sol habere motum ab austro in boream, vel econtra, et non ab occidente in oriens. Videtur ergo quod motus, qui est passio, sit prior quocunque mobili, quam motus formaliter successivus, qui est velox vel tardus; quia si aliquid movetur illo motu, ipsum limi- 15 tatur et patitur se taliter denominari quo ad quantitatem vel qualitatem; et non econtra.

Ideo non est concedendum quod iste motus, qui iam est velox, erit non velox per eius intensionem; vel econtra motus non velox erit velox; quia isti motus 20 sunt diversorum rationem, cum totum genus unius presupponit totum genus alterius. Et ita videtur michi quod, sicut motus qui est nisus ab oriente in occidens contrariatur nisui ab occidente in oriens, sic motus successivus ab oriente in occidens contrariatur motui 25 successivo possibili qui dicit formaliter adquisicionem. Ymaginabile tamen est motus circulares esse, qui si possent successive inesse celo, essent contrarii. Sed nulli sex motuum localium rectorum est motus circularis contrarius; ut non ascensui vel descensionem, cuius- 30 modi sunt motus a borea in austrum, et econtra; nec motui recto a dextro in sinistrum vel econtra, ut sunt motus ab oriente in occidens, et econtra; ut motui recto ab ante ad retro et econtra, ut motus a principio Cancrī versus Capricornum, vel econtra; eo quod 35 quilibet istorum motuum compatitur secum per totum motum circularem; et sic de motibus circularibus compacientibus se in eodem subiecto, dum non directe fuerit versus differencias oppositas.

Sufficit ergo philosopho quod celum per totum sit 40 exemptum ab omni violencia; ex quo verisimile est quod tam orbis inferior quam orbis superior describeret tam celeriter circulum sicut modo, subducto alterutro illorum motuum. Ideo non est de illis, sicut est in casu

Zenonis, in quo ponitur spacium recte moveri contra mobile motum.

108^b Ulterius conceditur quod sol[^{motus}] motu proprio versus oriens, tardatur attingere oriens; et sic de aliis mirabilibus conclusionibus sequentibus. | Si tamen motu proprie dicto precise moveretur versus oriens, tunc non sic tardaretur; quia moveretur 2^m aliam porcionem circuli versus oriens.

We may admit that the sun, moving eastwards by its own movement, delays in reaching the east; and so on.

10 Ulterius conceditur quod descriptio talis non est motus, sed unum accidentaliter habens motum. Nec quelibet adquisicio situs est motus, cum stat aliquod subito adquirere vel deperdere situm per continuacionem vel discontinuacionem partis quantitative; ut patet de augmentato vel diminuto, de multiplicato, vel de de-
15 multiplicato. Motus ergo qui est limitacio passiva etc. est passio; sed motus formaliter successivus et velox videtur michi non esse passio; sed motus accidentis passionis, ut motus localis proprie dictus dicit suum mobile, vel aliam partem primo moveri localiter, et
20 per consequens ipsum, vel aliquam eius partem prius fuisse in situ in quo post non est per successivam et parcialem situs adquisicionem, ad quam sequitur adquisicio ubicacionis. Ideo dicit commentator quod componitur ex multis affirmacionibus et multis negacioni-
25 bus; quia tales presupponuntur adesse tanquam principiantes, sed non quantitative componentes, cum sit forma simplex.

Also that the orbit described on the celestial sphere is not movement, but a thing that moves.

Movement, so far as it is passive, is a passion; not movement with actual change of place. It implies that the subject or a part of it occupies a place that it did not occupy before. Averrhoës says that it is made up of many affirmations and negations.

Sed diligenter notandum quod motus quandoque sumitur aggregative pro multis motibus aggregatis, eciam
30 discontinuis, vel quo ad tempus vel quo ad subiectum; sive sint unius speciei, sive sint disparium specierum: et illo modo dictum est progressionem esse motum compositum. Quandoque autem sumitur simpliciter pro motu cuius quilibet pars divisibilis vere continuatur
35 cum reliqua et est eiusdem rationis, ut motus puncti in equinocciali. Primo modo est augmentacio motus, et forte omnis motus citra velocissimum.

'Movement' is sometimes collective, and means many movements;

sometimes it means a movement of which each part is a sequel to the other.

Tercio principaliter dividitur motus 2^m suas passiones, ratione temporis mensurantis; ut aliquis est uniformis
40 et aliquis difformis; et uterque subdividitur quo ad subiectum et quo ad tempus. Quo ad subiectum est

Movement is either uniform or varied; uniform in its subject if each part of the

thing moved
has the same
velocity;

varied in its
subject, if one
part moves
faster;
uniform as to
time, if the
velocity is the
same at every
part of time;
varied, if the
velocity is
greater or less
in the different
parts of time.

These temporal
and quantitative
parts are equal
to the whole
movement;
but the first are
equal in
quantity, and
the second in
duration.

A humble
logician may
grant that the
part is equal to
and yet less
than the whole.
But it is well
to call temporal
parts duration,
and
quantitative,
magnitude.

Magnitude,
it not restricted
to quantity,
might be
inconveniently
applied to time.

Thus a
movement may
be uniform and
varied from
different points
of view — as
the movement
of the sky and
a falling stone.

Another
division of
varied
movements:
a) *uniformly*

motus uniformis, quando quelibet pars eius quantitativa quo ad molem est eque velox sicut aliqua talis, sicut est de motu lineari per equinoccialem circulum subiectato. Et dicitur difformis quo ad subiectum, quando una eius pars quantitativa 2^m molem est reliqua tali velocior, 5 ut est de motu colubri. Dicitur autem motus uniformis quo ad tempus, quando quelibet pars quantitativa quo ad successionem, que non est pars quo ad molem, est eque velox ut aliqua talis; sicut est de toto motu primi celi. Sed difformis dicitur quo ad tempus, quando una 10 temporis pars successiva est reliqua parte successiva subiecti primo moti velocior; ut motus naturales gravium et levium, qui velocitantur in fine. Omne autem successivum extensum habet 2^{ces} partes quantitativas, sicut 2^{cem} quantitatem; scilicet quo ad molem et quo ad 15 tempus. Et conveniunt iste partes in hoc quod utraque subiective, qua pars, est minor suo toto; ut medietas successiva motus est par toti motui et toti subiecto 2^m molem, et quantumlibet parva pars motus 2^m molem est equalis toti motui quo ad duracionem; et sic 20 iste equalitates et inequalitates dicunter equivoce.

Humilis tamen logicus, non querens apparenciam B 109^a sophisticam, concederet quod infinitum parva pars quantitativa motus et suum totum sunt equalia, et tamen totum illud est quantumlibet maius sua illa parte. Unde, 25 propter istas equivocas magnitudines distingwendas, vocatur una pars quo ad successionem vel diuturnitatem: et eius magnitudo vocatur diuturnitas. Et alia vocatur pars quo ad molem; et eius magnitudo propter famositatem vocatur simpliciter magnitudo motus. Magni- 30 tudo enim competit methaphorice magnitudini corporee, sicut multitudo convenit numero. Aliter enim dicit habens hoc pro inconvenienti palam sequi quod quelibet pars celi, eciam indivisibilis, esset quantumlibet magna, quia durative equalis suo toti: quod equivocans sine 35 inconvenienti concederet. Patet eciam quod motus uniformis est quantumlibet difformis, et e converso. Nam motus celi est uniformis, quo ad tempus, et difformis quo ad subiectum, et motus gravis est difformis quo ad tempus et uniformis quo ad subiectum. 40

Sed motuum difformium est ulterior divisio. Nam aliquis est uniformiter difformis, et alius difformiter

- difformis. Et hoc dupliciter: vel quo ad subiectum, vel
 ad tempus. Dicitur autem motus uniformiter difformis
 quo ad subiectum, quando cuiuslibet partis sue quan-
 titative quo ad molem gradus intensissimus tante excedit
 5 gradum eius medium, quante alicuius talis partis equalis
 gradus intensissimus excedit gradum eius medium. Et
 talis motus simpliciter uniformiter difformes non mo-
 ventur nisi lineariter. Nam mota spera, centro eius
 quiescente, quelibet eius semidiameter sic moveretur:
 10 sed de qualibet linea secante dyametros difformiter
 mota foret falsum quod uniformiter difformiter move-
 retur. Et cum motus corporum secuntur in velocitate
 motus suarum linearum et superficierum, patet quod
 partes quantitative talium sperarum oblique valde
 15 diversificantur in difformitatibus suorum motuum. Est
 ergo corpus dare uniformiter difformiter motum 2^m quid,
 quando cuiuslibet sue partis quantitative gradus inten-
 sissimus tantum excedit gradum eius medium quante
 alicuius sue partis equalis et simillime in figura et
 20 posicione gradus intensissimus excedit gradum eius
 medium: cuiusmodi sunt corpora quorum partes lineares
 uniformiter difformiter moventur. Sed uniformiter diffor-
 mis motus quo ad tempus est cuius cuiuslibet partis
 quantitative quo ad successionem gradus eius intensissi-
 25 mus tante excederet gradum eius medium, quante
 alicuius talis partis equalis gradus intensissimus excedit
 gradum eius medium. Est autem motus difformiter
 difformis quo ad subiectum vel tempus motus difformis
 cuius difformitas est difformis. Potest autem dici quod
 30 motus difformiter difformis, tam quo ad subiectum
 quam quo ad tempus, est dupliciter; vel sic quod
 quelibet eius pars quantitativa continue magna sit dif-
 B 109^b formis, vel sic quod quotlibet eius partes sint | difformes;
 et hoc contingit infinitis modis variari. Et sicut ex
 35 parte motus quo ad molem, et parte motus quo ad
 tempus potest fieri pars motus ex utrisque composita,
 ita ex motu difformi quo ad tempus et motu difformi
 quo ad subiectum et quo ad tempus; et ita mixtim in
 aliis divisionibus.
- 40 Sed ista dicta consecuntur tria dubia hic breviter
 pertractanda. Primum, Si possibile est motum vel tale

and b) *variably*
 varied.
 This too is
 either as
 regards (1) the
 subject or
 (2) the time.
 a) (1) It is
 uniformly
 varied in the
 subject;
 either
absolutely, as
 the diameter of
 a uniformly
 revolving
 sphere;

or partially, as
 bodies of
 which certain
 lines move
 thus.
 (2) Uniformly
 varied in time,
 when the
 highest
 exceeds the
 mean velocity
 as much in one
 quantitative
 part as in any
 other.

b) (1) *Variably*
varied in the
 subject; (2) in
 time.

Here there can
 be infinite
 modes of
 variation;
 and new
 species of
 movement can
 be found
 indefinitely.

Three
 questions:

1. will be dealt with in the next chapter. successivum esse. 2^m: Si continuum componitur ex non quantis, et 3^m: Penes quid ab effectu possunt regulariter attendi velocitates motuum. Primum tangetur proximo capitulo, supponendo talia successiva esse et ampliando verba de presenti, quantum oportet, loquendo de suc-⁵ cessivis.

*Question II:
Whether
continuous
quantity is
made up of
points.*

1. Points are naturally prior to lines; so they cause them, and intrinsically; so they are parts of the lines.

As the instant is the principle of time and unity of number, so is the point the principle of the line.

2. If not, all the points in a line could be successively taken from it, without shortening its length.

Thus every point would be an accident as regards the substance in which it exists. But this is impossible.

3. There must be indivisible points

immediate, i. e. having no space between them; for if two bodies

Pro 2^o argumentatur de punctis que requiruntur ad esse linee, tanquam priores naturaliter toto genere linee. Ergo sunt cause linee, et non extrinsece; ergo intrinsece et per consequens partes. Aliter enim omnes¹⁰ partes illius continui forent divisibiles; et tamen non haberent partes nec partem, ut prius deductum est. Et sic concludendum esset quod iste partes componunt et causant se ipsas, et sunt priores et posteriores 2^m infinitos gradus quam ipsemet sunt. Nec valet dicere¹⁵ quod non omnia sunt danda, ut alibi dictum est; nec est maior ratio quare instans est principium temporis ipso prius, et requisitum ad suum esse, sicut et unitas se habet ad numerum, quin per idem punctus sic se habet ad lineam.

20

Similiter: aliter contingeret auferri punctum a linea continuata cum alia, non plus auferendo; et per idem quemlibet punctum linee contingit auferri, et sic omnes, cum hoc quod maneat eadem linea; et sic quilibet punctus linee per accidens continuat unam eius partem²⁵ cum alia. Sed cum punctus sit accidens, oportet [ut] aliquod eius subiectum adequatum per se subiectat tales denominationes quales punctus accidentaliter recipit; ut *moveri, quiescere* etc. Substantia ergo per se subiectans punctum continuantem partes linee per se principiat³⁰ illam lineam; et cum illa non possunt esse sine tali puncto, patet quod nullus punctus potest auferri a linea, eadem manente; quia sic contingeret corrumpere omnem punctum corporeitatis dande, servando illam. Continuatis ergo duabus pyramidibus, erunt puncta³⁵ conalia immediata.

Similiter de immediacione ubicacionum vel situum indivisibilium, patet quod est dare tales immediatas. Nam est dare duo puncta immediata, ut patet de corporibus tangentibus se 2^m puncta. Sicut ergo talia⁴⁰ puncta sunt immediata, sic ubicaciones vel situaciones

eorum sunt immediate. Et, cum illi situs manent expunctantes alia puncta, patet quod quodocunque alter eorum erit occupatus aliquo punctali intra corpus, reliquus erit occupatus punctali sibi immediato; et per
 5 idem sequitur quod corpus pyramidis tangens medium punctum B superficie plane eque distantis superficie orizontes, est superior quam B, cum tota pyramis per totum sit supra B; et per idem, iacente illa pyramide super B planum, contingit ponere punctum conalem
 10 alterius pyramidis super primam pyramidem, et sic in infinitum; ita quod ad omnem punctum linee erecte
 B 110^a super medium punctum B | sit conus unius pyramidis.

touch each other in one point only, we have two distinct points that touch each other.

If the top of a pyramid is placed on the point B of a surface, its top will be above B; the top of another pyramid may be placed above its top, and so on, till a line is formed.

Similiter de instantibus; videtur quod erunt immediate, quia est dare duo, quorum unum durabit usque ad B instans exclusive, et aliud durabit usque ad illud instans inclusive, et non ultra. Et certum est quod est dare quandiu utrumque durabit; quia aliter non esset dare quam senex aliquis erit, aut quam diuturnum
 20 erit aliquod successivum. Et sic, demtis aliis superius tactis, certum est quod unum durabit diucius vel ultra reliquum per unum instans; quia aliter non essem senior quam ante fui, cum ante fui ita senex precise sicut homo qui incepit esse pro primo instanti mei, et nunc
 25 desinit esse. Et idem sequitur, si continue intendam motum meum vel actum merendi, et stem sub gradu actus quem nunc habeo, et uno alio merente exclusive usque ad hoc instans, et nunc decedente. Deus enim scit tales premiare proporcionally ad intensissimos
 30 gradus suorum meritorum; quia aliter noceret homini quod continuasset actum bonum, cum plus premiaretur merendo solum 2^a medietate sui actus meritorii. Deus ergo premiabit quemcunque 2^m intensissimum gradum sui meriti, si non ponat obicem.

4. There must be immediate *instants*; for if two beings last, one till the instant B exclusively, and the other inclusively, the latter will last longer.

The same consequence flows from the idea of merit exclusively or inclusively up to a given instant; God can remunerate one instant of merit.

35 Et conformiter videtur quod contingit unum dare ultra B instans per indivisibile, ut talem veritatem: A *tangit aliquem punctum C*, posito quod C sit nomen commune ad primam medietatem dati possibilis, et ad quamlibet partem imparem 2^e medietatis divise contra
 40 medium punctum; et quod A in B instanti primo

5. Let us suppose the truth: A touches some point of C, signifying the first half of a line and all the odd divisions of the second half;

1—2. exp^oates B. 5. 1a^{as} B. 20. dem¹⁰ B. 21. et certum B.
 26. zlle pro et stem B.

and that A gets
to the end of
the first half in
the instant B;
then the
proposition will
be true
immediately
before B, at B,
and
immediately
after.

There are also
indivisible
movements;
and, therefore,
also indivisible
instants to
measure them
by.

When we
divide two
contiguous
surfaces, v. g.
air and water,
there must be
two distinct
divisions,
therefore an
indivisible
movement from
one surface
to another.
And the
division of
each must
take place at
separate
instants.

This argument
holds in many
other cases,

v. g. in the
hypothesis
that were God
successively
to annihilate
and re-create
the same
individual
eternally,
the succession
of mediate
creations and
annihilations
would be time.

Note that
theologians
admit the
possibility of
this hypothesis,
and are yet so
inconsistent as
to deny that.

deveniat ad medium punctum, continuando uniformiter
motum suum super omnes partes proporcionales 2^e me-
dietatis: tunc patet quod A *tangere* C manebit usque
ad B instans, et immediate post B instans erit: ergo
duracio sua erit immediata B instanti, ante et post; 5
et per idem potest Deus proporcionare infinita taliter
se extendencia per descripciones situum punctualium
inmediatorum vel quomodolibet aliter.

Similiter est dare motus indivisibiles quo ad dura-
cionem immediate succedentes; ergo et mensuras instan- 10
taneas, ipsos mensurantes. Antecedens patet de divisioni-
bus superficierum immediatarum in corporibus contiguis
dividendis continue; ut, posito quod A dividens primo,
dividat superficiem B aeris, et post superficiem imme-
diatam C aque: patet quod dividetur distinctis divi- 15
sionibus, pari evidencia qua aliqua superficies dividetur
appropriata divisione. Et constat, cum divisio ponit
dividi aliquid de presenti, quod est dare instancia in-
mediata in quibus erit ita quod hoc dividens dividit
istam superficiem. Aliter enim dividens divideret quot- 20
libet superficies quas nunquam tangeret, ut infimam
superficiam B pro illo instanti in quo tanget C. Et
nunquam tangeret illam, nisi forte in instanti immediate
precedente; sicut tota divisio B terminabitur inclusive
ad illud instans in quo infima eius superficies dividetur, 25
cum continue usque ad illud instans manebit, et non
in illo vel post illud, propter nisum agentis. Et idem
sequitur de luminibus et quantitativibus qui innovabuntur
subito pro quolibet instanti istius hore 2^m se tota, de
pyramide circumrotata super multitudine punctorum 30
per se servatorum sine linea; ut posito quod Deus
annichilet Sortem, et post vivificet illum, et 3^o adnichilet.
et sic sine fine, patet quod, subductis omnibus motibus
preter tales, foret tempus; quia prius et posterius suc-
cessivum; et cum tempus se habet ad divisibilitatem 35
sicut motus et eius materia, patet quod illud tempus
componetur ex instantibus.

Et hic miror quare theologi admittunt casum ultimum,
et tamen dicunt quod Deus non potest auferre punctum
a linea | nisi addiderit alium, nec continuare duas B 110
lineas ad invicem, nisi corrumpendo puncta extremalia

et generando terminum communem, cum summe libere contradictorie agit ad extra; et quilibet punctus potest per se esse dependens ab alio.

He could take one point from a line without adding another.

Similiter, ex modo loquendi de difformitate motuum 5 quo ad tempus, patet idem. Nam motus uniformiter difformis, in quantum talis, terminatur ad gradum inclusive; quia aliter non esset dare gradum eis intensissimus vel medium, et per consequens non esset descriptibilis aliqua descriptione; quia dicere quod gradus 10 ad quem terminatur exclusive, qui non est in mobili, mensurat eius velocitatem vel uniformitatem, est plana contradicchio, cum medium requirat extrema illius cuius est medium. Et dicere quod gradus medius, qui non est extremum vel terminus illius motus, est plane de- 15 mencia.

6. Again; every uniformly varied motion must include the degree of intensity at which it arrives.

Gradus ergo medius motus uniformiter difformis quo ad tempus, erit gradus utriusque medietatis successive; quia aliter non continuaret unam medietatem latitudinis cum alia. Continua enim sunt talia quorum 20 ultima sunt unum: ut agregatum ex 2^{bus} terminis continuatorum est unum commune utrique continuatorum 2^m partes eius. Nichil enim continuat primo aliud cum alio, nisi fuerit illius quod continuat; ut punctus non est terminus communis lineis ipso continuatis, nisi sit 25 punctus utriusque illorum. Et ita, generaliter loquendo de continuacione, terminacione et velocitate successivorum incidit homo, velit, nolit, in istam sententiam.

Thus, when it arrives at half its intensity, there must be the same degree of intensity for the end of the first and the beginning of the second half. Otherwise the movement would not be continued.

Sic enim ponunt auctores quod habitantes sub polis zodiaci habent duos dies in anno, in quorum uno 30 habent instans pro nocte, et in altero instans pro die, emergentibus illis subito ex signis. Et illud plane patet ex hoc quod sol, describendo tropicum estivum, solum per instans tanget zodiacum fixum illo die; et cum zodiacus fixus sit orizon habitantibus sub circulo artico, 35 sequitur quod solum per instans deficit sol in illa die ab existencia suprahorizontaliter habitantium; et ita per idem instans vel agregatum ex paucis instantibus, erit illis nox. Supponatur enim [definicio] *quid nominis* terminorum, modo quo auctores locuntur.

Illustration of this by the fact that at the poles there is once a year a night, and once a day, of but one instant in duration.

40 Similiter, ut credo, nullus theologus negaret quin Deus de potencia absoluta potest facere substantiam

7. God can, absolutely speaking make a substance of the size of a point;

29. 30^{cl} B.32. 1^op1cu B.38. definicio *deest* B.

punctalem, vel condensando, vel noviter causando, vel
 3^o faciendo spiritum esse in situ punctali et annichilando
 omnem aliam creaturam preter talem spiritum servatum
 immotum; et tunc patet quod punctualitas vel punctus,
 que est substantia huiusmodi *esse* punctalis, est actus 5
 positivus [in] illa substantia, sive sit separabile sive
 inseparabile. Punctus ergo potest esse. Nec dubium
 quin, si Deus potest unum punctale producere, potest
 et quodlibet iuxtaponere. Nec dubium quin situs essent
 correspondenter iuxtapositi, cum situs sit subiectum 10
 situari. Et ultra patet quod Deus potest ex talibus non
 quantis facere unum quantum: quod sic ostenditur
 argumento ad hominem. Creet Deus ad omnem situm
 punctalem mundi unam substantiam punctalem, et
 annichilet post omnem substantiam continuam, servando 15
 punctales substantias inmotas; et patet quod Deus est
 adhuc per tantum locum sicut fuit in principio, et per
 consequens est tantus locus; vel saltem contingit tantum
 locum fieri ex illis punctalibus, sicut prius. Aliter enim
 non esset distancia, nec punctale fluens super alia 20
 punctualia posset moveri localiter; ut iste globus suc-
 cessive circumductus, causaret duracionem successivam.
 Posito ergo quocunque tali accidente continuo, oportet
 ponere subiectum eius continuum, et illud esset com-
 positum ex punctalibus, quia illa forent eius principia 25
 intrinseca. | Nec dubito quin, admissio hoc pro possi-
 bili, omnes philosophi mundi non haberent infallibilem
 evidenciam ad concludendum quod non est sic de facto.
 Nam, conformiter sicut tunc respondendum esset ad
 argumenta in oppositum, respondendum est et nunc. 30
 Nec adhuc argumentum plus concludit nunc quam tunc
 concluderet, nec experientia, vel auctoritas, vel quivis
 alius locus efficacius probat nunc quod non sic
 est, quam tunc probaret. Et negans puncta vel
 talia indivisibilia esse, nec vere loquitur de instanti 35
 temporis nec de motibus subitis, et generaliter de
 continuacionibus accidencium. Nec arguet efficaciter
 contra ponentes composicionem continui ex non quantis,
 nisi prius stabiliret nullum huiusmodi posse esse: quod
 faciendo nimis diu exceptaret principale intentum. 40
 Argumentando etiam pro isto puncto, multum expedit
 habere concessum quod omnia preterita vel futura sunt

and He can
 also place
 several of such
 points so as to
 touch each
 other.

And thus out
 of several
 inextended
 substances, an
 extended
 substance
 might be made.
 Suppose that
 God created
 such substances
 in every point
 of space,
 and then
 annihilated
 all continued
 substance.
 space would
 remain as it
 was, and the
 things in space
 also;

And if this is
 possible,
 I defy any one
 to prove that
 it is not so at
 present:
 the arguments
 against it
 would have
 to be refuted
 then as we
 refute them
 now, and are
 of no more
 value now than
 they would be
 then.

The truth that
 past and
 future are
 present to God,

Deo presencia: tunc enim sequitur omne quod erit aliquid, ipsum est taliter; et per idem, si aliquid dividet superficiem, vel erit summe propinquum ipsum, sic se habet: et hoc multum valet pro intento.

is of great use in this matter.

5 In oppositum est philosophus 6^o phisicorum, 3^o de celo, et primo de generatione, per multas pregnantes rationes et consideraciones difficiles contra Democritum et Platonem: ut puta de tactu, de mediacione cuiuscunque continui, de divisione cuiuscunque continui in
10 infinitum, de continuacione indivisibilis cum alio, et multis similibus que postea tanguntur.

First Objection: Aristotle, in many places, seems to contradict this.

Sed ad illud respondet Linconiensis, dicens quod Aristoteles intellexit nullum continuum distincte sensibile componi ex non quantis tanquam partes eius numeralibus. Et vocantur partes numerales partes quantitative, que aliquociens finite quo ad hominem sumpte constituunt suum totum. vel maius; et tamen impossibile est non quantum esse partem vel componere continuum sic sensibile. Verumptamen apud Deum est
20 notum ex quot non quantis mundus componitur, et quecunque pars eius corporea; sicut notum est sibi quota pars quantitativa anguli recti est angulus contingencie quam Euclides, 3^o elementorum 25^o, demonstrat esse minimam speciem angulorum, et partem anguli
25 rectilinei. Et sic dicit Aristoteles, primo posteriorum, punctam esse causam lineae, cum ponitur in eius diffinitione tanquam prius naturaliter. Ideo dicit Linconiensis quod ista opinio non contrariatur sensui Aristotelis, sed sequitur ex eodem. Nec est possibile punctuale
30 tangere vel continuari cum aliquo 2^m intellectum quem Aristoteles exponit de termino; quia supponit omne tale habere ultimum.

But Grosseteste points out that Aristotle has in mind that which is sensibly continuous: and that, of course, cannot be composed of indextended parts, such that we can distinguish or count them. But God can; as He knows what part of a right angle is the smallest of all, called the angle of continence. Aristotle admits that the point causes the line. Our view not only is not opposed to his doctrine, but follows from it.

Verumtamen unum indivisibile potest tangere reliquum, large loquendo; quia esse ad eundem situm
35 indivisibilem positum cum alio; et sic potest continuari cum alio large loquendo, quia facere unum continuum cum alio. Et compositum ex 3^{bus} punctis, vel quotlibet

One point can, in a wide sense touch another, i. e. be in the same place with it. A collection of points in odd number can have halves;

24. miam B. 30. it^m B. 31. def' uno B. 34. oe B.

22—23. *Angulus contingencie.* We find further on (p. 48), that the angle of continence is the one formed by a circle tangent to a right line.

for in one
sense, halves
must not
necessarily be
equal,
though in
another they
must.

Aristotle
proves nothing
contrary to
this.

Neither
geometricians
nor natural
philosophers
have anything
to do here, for
they consider
things as
belonging to
experience and
sense.

Now the point
is not sensible,
nor even
imaginable;
it belongs to
the province
of
metaphysics.

No number of
substances or
points can be
infinite; God
alone is so.
God knows
how many
points go to
make up a
square or any
other figure
that can be
perceived by
the senses.

If one
line, v. g. is
twice as long
as another, it
contains twice
as many
points:
but we cannot
know exactly

imparibus, habet medietates: quia sicut medium dupli-
citer dicitur, vel per abnegacionem extremorum, vel
per eque distanciam ab extremis, sic est dare duplicem
medietatem: scilicet, medietatem, que est pars simpli-
citer subdupla ad indivisibiliter plus vel minus suo tota 5
(et taliter loquitur arithmeticus de medietate maiori et
medietate minori numeri imparis). Et 2^o modo, sed non
primo, habet omnis quantitas medietates, i. e. duas
partes quantitativas incommunicantes, quarum neutra
indivisibiliter excedit reliquam totum equaliter constitu- 10
entes, licet ternarius et omnis quantitas habeat duas
medietates equales ad alium sensum.

Nec demonstrat Aristoteles oppositum, sicut nec de-
monstrat, si aliquod sit instans, ipsum est principium
unius temporis | et finis alterius; cum primum instans B 111^b
non precessit instans vel tempus, sed capit alias signi-
ficaciones ex famosis modis loquendi philosophorum
naturalium, quorum non interest tractare de partibus
punctualibus in philosophia naturali, in qua demonstratur
causa per effectus, demonstracione *quia est*, cuius prin- 20
cipium est experientia vel sensus. Punctus autem non
est sensibilis vel ymaginabilis; ideo tractatus eius non
pertinerit specialiter geometre, qui solum de ymagina-
bilibus pertractat directe, sicut nec naturali philo-
sopho. Sed illud conservandum est metaphysico et 25
aristotelico.

Unde impossibile est quod aliquis numerus substan-
ciarum vel punctorum, vel aliud preter deum sit simpli-
citer infinitum, cum omnis talis numerus habet deum
finem suum extrinsecus finientem et ultimum eius punc- 30
tuale finiens intrinsecus. Ymmo deus satis noscit quo-
modo omne quadratum per se sensibile integratur ex
partibus minimis et principiis eorum indivisibilibus
cumulatis. Et sic dicitur de qualibet alia figura prin-
cipiata ab indivisibilibus primi numeri, ut figurati. 35
Novit eciam in qua proporcione quicunque numerus
punctorum se habet ad alium; et de istis habemus nos
inseparabilem ignoranciam. Scimus tamen quod, si una
linea fuerit 2^{pla} ad aliam, tunc numerus punctorum
eius est duplex ad numerum punctorum alterius; et sic 40
de similibus. Verumptamen non possumus scire nisi

2. abneg^{em} B.7. isto pro 2^o B.23-24. ymag^{b9} B.26. aris^{em} B.32. 4^{tu} B.33-34. expt^f B.

sciencia confusa et communiter dicta aliquod tale ante-
 cedens; ut nemo mundi scit distincte quantum est hoc
 corpus, quodcunque demonstretur; quam velox est iste
 motus; quod hoc est medium instans, vel principium
 5 huius dici. Et sic de aliis singulis que supponimus
 taliter se habere, quando contingit nos loqui de talibus
 illis. Ideo dixerunt philosophi quod de singularibus,
 propter suam infinitatem, non est sciencia. Omnem ergo
 numerum qui excedit ingenium nostrum ad aptandum
 10 sibi terminum specificum naturalem vocamus infinitum,
 sicut profunditas maris dicitur in una significacione
 esse infinita; et talia que sunt hominibus inmensura-
 bilia et illa voco infinita 2^m quid, vel quo ad homi-
 nem, et ita intelligo quandocunque pono numerum
 15 infinitum.

Unde, ymaginato quod Deus successive addat ad A
 punctum alia puncta, continuando unam lineam, est
 dare instans quando numerus punctorum erit 2^m quid
 infinitus uni, et quando erit 2^m quid infinitus alteri;
 20 et sic diversi (2^m perspicacitatem suam) habebunt diver-
 sos maximos numeros illis finitos, et diversos numeros
 minimos illis infinitos. Nec est inconveniens unitatem
 additam vel subtractam a numero facere quod quis
 non sufficiat distincte totum apprehendere confuse, cum
 25 cognoscatur de quocunque tali quod illud esset finitum;
 et si esset duplicatum, quadruplatum; et sic quamdiu
 scivero numerare. Est ergo dare maximum numerum
 quem quis potest distincte simul apprehendere, et nullum
 numerum sibi infinitum excedentem solum per unitatem
 30 quem non sufficit distincte apprehendere. Omne enim
 distincte sensibile continet ultra hoc quod scio distincte
 calculare indivisibilia 2^m quid infinita. Unde maxima
 multitudo eorum est numerus maximus possibilis, sed
 finitus, et per consequens multitudo instancium, ter-
 35 minorum, vel parcium talium quaremlibet est finita;
 licet tempus sit infinitum a parte post, quo ad finem
 intrinsecum, sed non quo ad finem extrinsecum (qui
 est Deus) omnium novissimum. Et sic dicitur de pro-
 porcionibus quod repugnat aliquam esse simpliciter
 40 infinitam. Tempus ergo est sic infinitum a parte post;
 sed non concipio quod aliquid possit esse sic infinitum

that it is twice
 as long, nor
 indeed anything
 relative to size,
 movement, &c.

'Infinite' is a
 term we use
 for denoting a
 number in-
 conceivably
 great;
 it is in this
 sense of
 relative
 infinitude that
 I employ it
 when speaking
 of number.
 Suppose that
 God adds one
 point to
 another so as
 to make a line,
 there will come
 a time when
 the number is
 infinite to one
 man, and then
 to another,
 according to
 his power of
 conceiving it;
 and the
 addition of a
 single unit
 makes the
 difference
 between
 infinite and
 finite, in this
 sense.
 The greatest
 possible
 number of ages
 is a finite
 number;
 though time is
 infinite in the
 future, it is not
 so to God,
 nor is it at all
 infinite in the
 past.

I cannot conceive of a straight line infinitely long, forming a circumference or having an end anywhere. We thus admit that the extended is infinitely divisible *relatively to us*; no other infinitude of division can be proved.

Second Objection. All 'infinities', according to this theory, contain the same number of points. For if two mobiles pass over spaces respectively equal to 1 and to 2 feet in 1 hour (or the same number of instants) they pass over the same number of points. Or if the two lines A and B are the circumferences of concentric circles, then there are as many points in B as there are radii of its circle; and just as many in A; for the radii are the same from the centre.

Answer. It is not true that either of the mobiles passes over one point in one instant.

a parte prius, nec quod aliquod tempus posset anteriorari; nec quod linea simpliciter infinita 2^m unum extremum | possit circumduci vel figi aliter termino ^{B 112^a} fixo propius per eius talem amocionem, ut communiter ymaginamur homines. Unde satis est pro sensu philo-⁵ sophi quod omne continuum sit 2^m quid divisibile in infinitum et ultra omnem numerum finitum a viatore distincte noscibilem. Unde volens argumentare infinitatem simpliciter per communes exponentes, nunquam probabit illum saltum monstruosum: et sic in infinitum.¹⁰ Sed do ultimum cuiuscunque corporis, superficie, linee, vel finiti termino intrinseco. Et patet solutio ad primam rationem factam.

2^o principaliter argumentatur quod nullum infinitum sit reliquo maius; quia sit A linea pedalis, cuius puncta ¹⁵ sint subdupla in multitudine ad lineam [B] bipedalem; et pono quod C [et] D, uniformiter movendo, describant istas lineas adequate in hora: et tunc videtur quod tot precise puncta tangeret C in ista hora sicut D, quia utrinque precise tot quot instancia erunt in ista hora;²⁰ eo quod pro quolibet instanti tanget solum unum novum punctum. Cum ergo quecunque sint equalia alicui tercio sunt equalia inter se, videtur quod uterque maximus numerus punctorum sit equalis alteri, sicut est equalis maximo numero instancium huius hore. Et idem ²⁵ deducitur, ponendo A et B circulari concentrice; tunc precise tot puncta sunt in B quot sunt semidiametri ab illo ad centrum; et tot sunt puncta in A: quia que- libet talis dyiameter tangeret in A disparem punctum, sicut tangit in B, cum omnes tales primo concurrent ³⁰ in centro, eo quod aliter non esset recte. Et idem deducitur de infinitis punctis existentibus in eodem situ indivisibili applicatis infinitis pyramidalibus 2^m conos ad eundem punctum in aere. Et ad id fiunt multa argumenta mathematicalia et geometricalia, reducendo ³⁵ opposita conclusione 10^{me} et cuiuslibet conclusionis Euclidis.

Et hic dicitur quod claudit contradiccionem C et D pro quolibet instanti huius hore tangere novum punctum, sic tarde movendo. Pro quo notandum quod,⁴⁰

1. app⁹ B. 16. B deest B. 17. et deest B. 35. redu^{do} B.
36. 9^{ue} B.

dato puncto velocissime moto qui, gracia exempli, sit punctus equinoxialis; ille pro quolibet instanti temporis acquirit et deperdit situm punctalem et nullus alius tardius motus; sed aliquis exceptat per duo instancia, 5 aliquis per 4^{or} instancia, et sic proportionaliter 2^m quod tardius movetur illo. Nam motus celi est minimus possibilis quo ad multum de situ describendum in parvo tempore, eo quod est velocissimus possibilis; et ille est mensura omnium aliorum motuum; non solum regu- 10 lariter dictus mensurare tempus et aliorum motuum quantitates, sed efficiens omnes alios motus proprios, cum, cessante illo motu, cessarent alterationes et motus locales quicunque mobilium non intellectivorum. Patet ergo quod quilibet punctus recte motus vel circulariter 15 per horam tardius quam punctus velocissime motus, tanto pauciores situs adequate describet, quanto tardius movebitur.

Et ex istis potest patere, cum nichil potest velocius moveri motu successivo quam movetur equinoxialis, 20 et cum Deus non potest creare maiorem mundum quam potest circumducere, sequitur quod non maior mundus potest esse, nisi forte posset moveri successive motu subito, stante continuitate parcium: vel forte Deus posset spissius ponere punctalia in mundo, stante eius circum- 25 ferencia in eodem situ, ita quod poli possent quantumlibet plus distare sine eorum motu. Conclusio principalis de posicione mundi in magnitudine, situ, figura, et terminis inseparatis consequentibus est multis eligibilior, quam alie recitate.

30 Patet ergo ex dictis quod argumentum 2^m peccat in materia, capiens quod omne punctum | localiter motum pro quolibet instanti acquirit situm punctalem: quod non est verum, cum sicut intercisiones talium adquisicionum proportionaliter ad tarditates motuum. 35 Sed argumentatur contra illud per hoc quod tales motus non essent continui, cum, pari evidencia vel maiori, mobile per horam quiesceret quiete illis opposita; experiuntur tamen tales motus esse contra nos.

Alone the equinoctial point in the sky passes over one point in each instant; all others pass over less, according as they move slower, for the movement of the sky is the most rapid possible and not only is taken to measure, but really does measure all others.

Note that this agrees with the truth that the world cannot be greater than it is; for God cannot create a world too great to be revolved thus, unless under certain hypotheses which are very unlikely.

Thus in this argument the assumption is wrong. It may be urged that it so, we may just as well call movement during an hour, rest during that time, yet we see the contrary.

10. doctus B.

26—27. Con^o pu^{li}s B.

28. 9ntib9 B.

2. *Punctus Equinoxialis.* Doubtless the point where the equator is crossed by the ecliptic, and which is supposed to turn round on the equatorial circle once a day.

We answer
that continuity
of movement is
apparent, not
real, as all
continuity is.

The senses
often mislead
us in this
matter.

When the time
taken up by a
phenomenon is
very short,
there are many
illusions.

A burning
brand, swung
round, seems
a circle of fire;
a red point on
a white top
forms a circle
too, when it
revolves.

Reason, not
sense, must be
judge in such
matters.

We do not
note the
minute
motions and
rests distinctly,
but there is a
confused
feeling that
produces the
idea of
continuous
motion.
This motion is
thus an
aggregate of
many
movements and
many rests.

Continuity of
motion may
apply either to
movement
without any
intermingled
rest, or to
movement of
which the
primary
measure is
continuous.

Hic dicitur quod loquendum est de continuacione motuum quo ad tempus vel quo ad subiectum, sicut dicendum est de continuitate formarum substancialium et simplicium in mixtis, et de densitate ac raritate corporum. Pro quo declarando, notandum 2^m sententiam 5 perspectivorum et communem experienciam, quod maxima deceptio contingit in sensibus, in significando continuitatem motus. Cuius ratio est, quia tam ad situs quam ad motus significacionem requiritur tempus conveniens; et ideo parvitas temporis facit quotlibet illusiones; ut 10 ticio circumductus in noctibus videtur causare ignitum circulum, sicut et punctus sensibilis rubricatus in base alba troci celeriter circumducti; ut exemplat Avicenna 6^o naturalium, et Boccus in principio musice sue, et experientia communis de ioculantibus docet idem. Et 15 patet quod non est credendum sensui generaliter in talibus, sed potius rationi, errorem sensus corrigenti. Unde de singularibus sensibus habemus exilem scienciam, quam aliqui vocant scienciam communiter dictam scienciam putativam, probabilem, thopicam, sive fidem. 20 Ex ista porporcione ergo temporis convenientis, ex uno latere latet sensum talis parvus motus velox, et ex alio latere manet in sensu communi et ymaginativa species et iudicia servata de coloribus et sitibus, dum motus fuerint celeriter repetiti; et hinc fit talis illusio. 25

2^o supponatur ex supra dictis quod sicut motus agregatus vocatur motus inter cuius partes intercidunt multe quietes vel multa substancialiter illi impertinencia, porporcionaliter dicendum est quo ad intercisionem instancium de quandalitate vel tempore agregato. Sic 30 enim oportet philosophum loqui, ampliando verba de presenti, quando loquitur de huiusmodi agregatis; ut patet de stirpe vel genere, de religione vel ordine, de populo vel quacunque alia multitudine.

His premissis dicitur 3^o quod dupliciter dicitur motus 35 continuus; vel simpliciter ut solum motus, vel velocissimus, inter cuius partes non est aliqua invasio quietis opposite; vel motus continuus quo ad eius primam mensuram, licet intercidant multe quietes opposite. Et istum voco motum continuum 2^m quid. Et 40 taliter oportet quemcunque philosophantem ponere

omnem progressionem, omnem tremorem cum suis consequentibus esse continua, ut sunt soni cordarum, et generaliter omnes soni vel loquele; cum quotlibet similibus, in quibus sunt quotlibet intercisiones, ratione
 5 motuum reflexorum, licet sensus decepti putant talia simpliciter esse continua.

To the second sort belong progression, and undulatory movement, such as sound, which appears to be unbroken to our senses.

Istis notatis, dicitur quod quilibet motus successivus est modo suo continuus. Unde datus motus est continue per suam primam mensuram, hoc est, aggregatum
 10 ex instantibus vel quandalitatibus indivisibilibus, in quorum quolibet movetur mobile talis motus; quia pro nullo signo illius measure desistit. Et proportionaliter dicendum est de quiete opposita habente mensuram incommunicantem sed commixtam. Et patet solucio. Sic

All successive motion is continuous, for it exists during a continuous aggregate of instants.

15 enim est motus augmentacionis continuus, licet multe quietes interdicant (ut vere dicit Commentator); et ita continuat, quantumlibet tarde motum. suam mocionem respectu sue prime measure. Nec est inconveniens, sed consonum rationi, vocare agregatum ex indivisibilibus
 20 aut divisibilibus distantibus substanciam, quantita-

Development is a continuous motion, though it may often be arrested, because it fulfils itself continuously in a certain space of time.

B 113^a tem | qualitatem, etc. ut alibi patet diffusius.

There is nothing absurd in calling indivisible points a substance or a quality.

Uterius, quo ad 2^m de A et B circulatis concentrice, dicitur quod talis est proporcio numeri punctorum ad numerum punctorum, qualis proporcio circuli ad cir-
 25 culum; et ita generaliter de quibuscunque continuis et multitudinibus ipsa continentibus. Ideo ponunt sapientes concorditer quod prima ratio mensurandi est in numeris; et patet quod quotlibet semidyametri et circuli concurrent, antequam deveniatur ad centrum, servando rec-
 30 titudinem.

In the case of two concentric circles, of which one circumference is double of the other, the former will have double as many points.

Ideo est assumptum argumenti falsum. Quis namque negaret quin, ponendo puncta A circuli esse immediata, semidyametri initiate a punctis immediatis statim concurrerent antequam procedatur distancia sensibili versus
 35 centrum? Unde opiniabile est quod circumferencia mundi est maxime regulariter de possibili circularis; et cum ipsa habet graduum remissimum arcualem, opinabile est quod supremus circulus excedit circulum proximo suppositum solo puncto. In circulis autem magis curvis,
 40 propter irregularitatem ultimo linea circularis excedit sibi proximam multis punctis; et hec est 2^a consideracio quare non potest esse mundus maior, quia quantus mundus potest esse, tantus potest esse mundus circularis; sed non potest esse maior mundus circularis, cum

The circumference of the world is probably a perfect circle, with the least possible curvature, and exceeds the nearest possible inscribed circle by one point only; but the others, being more curved, differ by many points.

This again
proves that the
world cannot
be larger than
it is;
for no
circumference
less curved is
possible, and
the world
must be a
sphere.

This takes
nothing from
God's power;

an infinite
world and a
world no larger
than a pea, are
both equally
impossible.
No straight line
can be longer
than the
diameter of the
world;
so there are
lines which
cannot possibly
be straightened.

It is said that
if the apices
of many
pyramids
touched each
other, many
points would
be in the same
place.

But this is
impossible, if
we admit that
the position
of apex A and
that of apex B
are different.
There is just
the same
impossibility
for two points
to coexist, as
for two
volumes.

These apices
constitute
magnitude, as
has been
shown;

remississimus gradus circulacionis possibilis sit sue circumferencie ultime conveniens: ergo, etc. Cum enim in qualibet latitudine sit dare gradus immediatos et gradum remissimum 2^m illam viam, patet quod sic est ponendum in latitudine curvacionis. Possibile est ergo deum 5 creare mundum 2^m quamlibet partem sue circumferencie remississime circularem; et cum nemo scit probare quod non sit ita de nostro mundo, patet sequi ex illo supposito et opinione de compositione continui ex non quantis ac aliis necessariis, quod non potest mundus 10 alius esse maior. Nec plus derogat hoc infinitati divine potencie, quam quod non potest producere alium filium, adnichilare suam fabricam, vel producere mundum in specie milius figuratum. Sicut ergo esse mundum infinitum simpliciter propter nimietatem magnitudinis non 15 esset validum nec esse mundum equalem pise propter nimietatem parvitatatis eciam non valet; sic videtur quod inter hec extrema intelligibilia est dare optimum gradum medie quantitatis; quoniam verisimile est Deum scire et velle in tam principali fabrica contigisse. Ex istis 20 patet quod non potest esse linea recta longior quam mundi dyametrum et per consequens non quelibet linea est rectificabilis.

Ad 3^m dicitur quod impossibile est multa puncta vel substancias punctales esse simul in eodem situ 25 indivisibili; quia per idem possent multa prima subiecta situs huius esse in eodem situ individuo: quod repugnat formaliter cum hoc posito de A et B subiectis. Patet quod aliud est A situari et aliud B situari; et per consequens situs vel situaciones sue distinguuntur. Et idem 30 sequitur de *ubi* indivisibili, cum sit actus qui multiplicatur ad multiplicacionem subiecti sui primi. Et confirmacio huius est, quod tanta foret ratio repugnancie quod puncta forent simul quo ad suos situs, sicut quod quantitates molares essent simul coextense; sed hoc non 35 potest esse: ergo nec primum. Si enim quilibet punctus A potest esse simul cum puncto B, tunc totum A potest coextendi cum toto B, et per consequens totus mundus potest esse involutus in quantumlibet parvo situ. Dicitur ergo quod puncta | conalia pyramidis cumulata con- B 113^b stituent magnitudinem, ut tactum est superius, cum

unum distabit ab alio per quotlibet intercepta. Unde argumenta hominum volencium detrudere quotlibet talia puncta in eodem situ indivisibili petunt pro fundamento quod non sit possibilis compositio continui ex non
 5 quantis. Ideo illud 3^m non est probacio, sed peticio principii.

to suppose the contrary is to beg the question.

Unde alias dixi quod non possunt plura quam sex puncta immediate circumstare eundem punctum in medio. Et hec est una causa quare septenarius est numerus
 10 universitatis. Omnem ergo punctum mundo sensibilibiter intrinsecum circumstat immediate, versus quamlibet 6 differenciarum, unus punctus. Sed argumentatur communiter quod quemlibet punctum intrinsecum circumstant puncta infinita; quia sit A punctus in aere quem
 15 solum sex puncta tangunt 2^m istam viam, tunc patet quod A constituit trigonum superficalem, quadratum, pentagonum; et sic de qualibet specie figure superficialis, quo ad gradum eius minimum. Ex quo sequitur quod A tangit infinita puncta; quia, sicut tangit punctum
 20 directe orientalem et punctum directe occidentalem, ita tangit utrumque immediatum suprapositum aut suppositum illis punctis; quia, sit B punctus immediatus A orientali, et C punctus sibi immediate suprapositus, et D punctus immediate supra positus A B in linea eque
 25 distante immediate B C lineam; et patet quod A B C D constituunt unum quadratum minimum, et quod unum quodque istorum 4^{or} punctorum sit immediatum cuilibet eorumdem. Videtur ex hoc quod nullus punctus est fingendus interciderere inter unum et alium. Quod con-
 30 firmatur ex hoc quod linea aliquante incidens, que habet punctos angulares intrinsecos, cum sit recta et continua, habet utrobique puncta immediata. Patet ergo quod A, ex una quadrata superficiali, habet 3^a puncta; scilicet B C D sibi immediata, et per idem habet versus
 35 occidens alia tria puncta; et sic habet sex puncta inferius tangencia; et per idem, multiplicando pentagonos,

Only six points can touch a seventh placed in the middle: thus 7 is the number of totality.

But here is a difficulty; it would seem that every point is touched by an infinite multitude of others.

If a given point A touches another B, which is itself touched on each side by the points C and D, then A must also touch these, and so on *ad infinitum*.

12. \widehat{drar}^o B. 14. ac' B. 16. 4^{um} B. 21. $utr \zeta$ B. 26. 4^{um} ;
 and so all along B. 30. $a'qe$ B.

1. *Unum distabit*. Wyclif seems inconsistent here. He all along says that his indivisible points are 'immediata'; which I cannot understand to mean anything else, except that they touch each other.

exagonos, etc., haberet ex omni parte puncta circum-
stancia infinita.

To answer this,
note that the
world, with
each of its
parts, has
positions
corresponding
to its diameters
of length,
breadth and
height; and
these
diameters have
their points
placed
differently from
all other lines,
somewhat like
directions of
cleavage in
wood or stones;

and they
influence the
position of
all points, so
that a given
point A will
be touched by
only 6 other
points in the
direction of the
three diameters
of the world,
and by no
others.

It does not
follow that
any line drawn
to a point is
bent, unless in
this direction;
for it will
touch that
point by means
of another that
touches it, and
belongs to one
of the three
diameters.

Pro ista consideracione solvenda, notandum quod
mundus, sicut quotlibet eius partes, habent posiciones
suas lineares et superficiales, quarum posicionum radix 5
est 3^x dynamiter mundi; scilicet longitudinalis, latitudi-
nalis et altitudinalis. Iste autem tres dyametri, sicut et
quelibet linea ab aliqua istarum eque distans, habet
aliam manierem posicionis suorum punctorum, quam
alia linea reliqua obliqua. Sicut enim non esset ratio 10
scissibilitatis ligni vel lapidis 2^m poros longitudinales
pocius quam transversi, nisi ratione disparitatis in
continuacione linee naturalis, sic in mundo non esset
ratio quare una dyameter esset longitudinalis vel lati-
tudinalis, pocius quam quelibet tracta ad quoslibet polos 15
mundi, cum esset ratio specialis quam ego pono a
michi probabili ex posicionem suorum punctorum respectu
punctorum alterius linee oblique; et hinc videtur
radios influxos in ista inferiora habere disparem efficaciam
2^m modum disparem incidendi. Dico ergo quod omnis 20
punctus sensibiliter intrinsecus alicui istorum trium
linearum vel sibi eque distancium, tangit duos punctos
in eadem linea, et nullam reliquum angularem. Ut in
casu posito, si A sit punctus talis linee, tunc illum
tangunt solum sex puncta versus 3^s diferencias supra 25
dictas, ita quod nullius quadrati minimi puncta angu-
laria obliquata a posicionem predicta tangunt se.

Et si argumentatur quamlibet lineam [non] directe
incidentem quo ad posicionem | predictam esse curvam, B 114^a
dicitur quod non sequitur. Pro quo notandum quod 30
quelibet punctus linee primi modi est punctus linee
2ⁱ modi, et econtra. Unde linea in medio incidens inter
duos semidyametros mundi, dividendo angulum rectum
in duo equalia, ut loquitur geometer; ut, gracia exempli,
C linea incidens inter A semidyametrum orientalem 35
et B semidyametrum meridianum, tangit per centrum

15. t^sa B. 18. v^er B. 20. incedendi B. 22. ta^{nt} B. 28. non
deest B. 32. lra B.

28. It is with some hesitation that I have added *non* here,
supposing *directe* to mean 'in the direction of one of the world's
diameters'. Any line produced to the point A in another direc-
tion would form a curve with its last two points, so to speak.

punctum A linee immediatum centro. Ex quo sequitur quod ille punctus A linee est medius inter centrum et punctum angularem proximo supradictum punctum in linea immediata. Et sic ascendo oblique 2^m situs indivi-
 5 sibilis immobiles et sempiternas. Unde, quicumque concedit talem lineam non esse rectam inveniatur in mundo alium situm rectius positum vel ponibilem inter extrema. Rectum enim est longitudinaliter positum, cuius nullum
 10 medium obliquatur ab extremis eiusdem. Et si argumetur quod non sit ratio quare punctus A linee, immediatus centro, sit extremum C tangens centrum, quin
 per idem punctus B linee, immediatus centro, sit extremum C linee per quod tangit centrum: dicitur quod sunt due tales linee, quarum utraque communicat cum
 15 reliqua in omnibus preterquam in signatis punctis. Ideo oportet ex suppositione capere C esse lineam illam que per punctum A linee immediate centro tangit centrum.

Ex istis patet quod non sequitur: *A punctus tangit*
 20 *B punctum*, et *B punctus tangit C punctum*: ergo. *A punctus tangit C*. Ymaginatio autem non sufficit ista capere, cum solum capit sensibile cumulari supra sensibile et per consequens inter illa intercidere angulariter unum minus. Ideo oportet superius ascendere ad aciem
 25 intellectus in recte concipiendo compositionem continui ex non quantis. Quod grave est facere, ex hoc quod ymaginatio cogit intellectivum in apprehensione cuiuscunque ymaginabilis: et cum in toto ambitu sui obiecti non reperit compositionem huiusmodi parcium, non est
 30 mirabile si dissentit. Sed intellectus dicit sibi quod est dare parcium indivisibilium compositionem aliam, quam non est suum discutere.

Sed quia dicta posicio videtur plurimum repugnare conclusionibus geometrie cum suis principiis; ideo expectat parum disgre-
 35 dit parum disgre-
 tam lucidis veritatibus, ex tam firmis principiis demonstratis. Libenter tamen scirem a modernis arguentibus geometrice contra dictam viam de compositione continui ex non quantis, quid ipsi vocant lineam, superficiem, punctum et angulum; si negent talia mathematicalia posse [esse], quomodo non verentur arguere, pec-

No line could be straighter. None of its intermediate points is out of line with its extremities. If it be said that it might as well touch any other point that touches the centre, this is denied, because they form different lines, differing by one point only. This is a sophism: The point A touches B, and the point B, C, &c. A touches C. It is true that we cannot imagine these things; but we must transcend imagination by intellect: a work of some difficulty, because imagination cannot find the inextended anywhere, and consequently dissents. Argument *ad hominem* against Nominalists: do they admit mathematical points, lines, &c.? If not, how can they urge geometrical difficulties against us? And if they do, they admit our position as true.

cando in materia, dum sumunt sibi notorie impossibilia? Si autem dicant quod necessarium est esse huiusmodi elementa, ut oportet geometriam supponere, coacti erunt concedere quod talia non possent mathematice sustineri, nisi ponendo sua subiecta indivisibilia, et per conse-⁵ quens componere substancias sensibiles quarum sunt principium.

Different
senses:

(1) *Of a point*:
either the
minimum
perceptible by
our senses, or
the absolutely
indivisible end
of a line.

(2) *Of a line*:
length either
without
sensible breadth
or thickness,
or without any
at all.

(3) *Of a
surface*:
length and
breadth
without
sensible
thickness, or
absolutely
without
thickness.

(4) *Of an
angle*:
either the
relation of two
natural lines,
meeting in a
natural point,
or of two
mathematical
lines meeting
in a point
of the same
sort.

The first sense
seems to be
employed by
Euclid.

Not every
'indivisible',
only that
'indivisible' of
which a line is
made up,
is a point.
This is rather
a description
than a
definition;

Primo ergo notandum quod unumquodque 4^{or} pre-
dictorum potest intelligi equivoce. Nam punctus potest
significare vel minimum sensibile 2^m 3^s demensiones 10
terminatum intrinsecus quantitatis continue permanen-
tis, vel terminativum linee intrinsece simpliciter sine
parte. Et sic linea potest significare vel quantitatem
continuum, permanentem, sensibilibus longam, sine sen-
sibili latitudine vel profunditate eiusdem, vel 2^o quan- 15
titatem permanentem sine | latitudinali profunditate B 11.4^b
simpliciter. Similiter, superficies potest significare quan-
tita-tem huiusmodi longam et latam sine profunditate
sensibili; vel quantitatem huiusmodi sine profunditate
simpliciter. Et res primi modi vocantur apud philosophos 20
puncta, linee, vel superficies naturales. Et res 2ⁱ modi
vocantur puncta linee vel superficies mathematice. Et
diversimode sencientes statuerunt sibi talia naturalia
disparium quantitatum; sed omnia huiusmodi, solo
intellectu noscibilia, sunt posita in suo termino naturali. 25
Angulus etiam potest significare posicionem figure sen-
sibilis 2^m concursum linearum lateralium ad punctum
eius signabile naturalem; vel posicionem significanter
simpliciter 2^m concursum linearum lateralium ad punc-
tum eius mathematicum terminantem. 30

Et iste videtur esse sensus Euclidis et aliorum mathe-
maticorum loquencium de istis 4^{or} modis rerum. Non
enim potest intelligi omne indivisibile esse punctum,
quia tunc Deus et quelibet unitas ac principium cuius-
cunque generis esset punctus. Ymmo sunt quotlibet 35
indivisibilia situata, quorum nullum poterit esse punc-
tus. Ideo melius et planius dicitur quod punctus descrip-
tive est indivisibile compositivum linee. Et si obicitur
quod linea, cum sit puncto posterior et compositivum,
cum sit passio vel accidens puncto, non debet cadere 40
in eius diffinitione: dicitur quod punctus, cum sit extra
genus, describi potest, sed non proprie difiniri. Nec est
inconveniens in tali descriptione poni quodammodo
posterius. Verumtamen patet logico quomodo punctus

- est prior linee in elementari compositione. Sed linea
 est prior puncto in finali ratione, cum est finis gracia
 cuius est punctus. Et sic eadem causant se reciproce
 in dispari genere causandi. Et oportet proprietates
 5 capere logico differenciarum latencium in quotlibet
 describendis. Ulterius, quo ad decripcionem linee vel
 superficiei, notandum quod longitudo vel latitudo non
 est eius genus vel species, sed passio aut accidens; sed
 sicut punctus aut punctualitas est *substanciam esse punct-*
 10 *tualem*, sic linea vel linealitas est *substanciam esse*
linearem, cui inseparabiliter accidit longitudo; et super-
 ficiem que est *substanciam esse superficiale* insepara-
 biliter consequitur quo ad speciem latitudo, licet eadem
 superficies posset nunc esse longior aut laciore, et nunc
 15 brevior aut stricior eadem, dico 2^m materiam. Pro
 quo notandum quod in quolibet corpore est dare maxi-
 mam lineam, maximam superficiem, et maximam mul-
 titudinem punctualium, que est prima mensura penes
 quam attenditur cuiuslibet talium magnitudo.
- 20 Ex quo patet quod eadem corporis magnitudo sit
 equalis sue maxime linee et sue maxime superficiei; et
 per consequens rectificata maxima linea mundi haberet
 duo extrema cum medio et proporcionem finitam ad
 quamlibet eius partem, manens continue causata: ut
 25 mundus. Hec tamen rectificacio est impossibilis, sicut
 et posicio linee simpliciter infinite. Talis enim foret
 infinitum maior mundo.
- 2^o patet quod linea non superaddit multitudini puncto-
 rum nisi continuationem; superficies superaddit linee
 30 continuationem linearum immediatarum, et corporeitas
 continuationem huiusmodi superficierum. Unde in pre-
 dicacione 2^m causam suscipiunt omnia hec 4^{or} de se
 invicem predicacionem, licet non formalem.
- 3^o patet quod longitudo, latitudo, et profunditas non
 35 sunt quantitates sed quantitatem continuam consequen-
 tes, licet geometre propter ampliorem noticiam et dif-
 ferenciam accipiant longitudinem et latitudinem, loco
 generum linee et superficiei. Nec ista duo et profunditas
 correspondent proporcionabiliter quantitati. Nam nullum
 B 115^a corpus est precise eque magnum, ut longum, | quia
 tunc ipsum et linea sua longitudinalis essent equalia;

at any rate the
 word 'line'
 can enter into
 it, for lines and
 points cause
 each other
 diversely.

Note also that
 points, lines
 and areas are
 accidents of
 substances,
 and mean
 simply that a
 substance has
 position, length,
 or surface.
 In each body
 there is a
 maximum of
 length of
 surface and of
 number of
 points.

And its size is
 thus equal to
 its greatest
 length or
 surface;

though in some
 cases such lines
 cannot be
 made straight.

The line adds
 nothing to the
 points but
 their
 continuity: the
 surface is but
 a series of
 lines, the
 volume, a
 series of
 surfaces that
 touch.
 Length, breadth
 and height are
 not quantities,

and thus
 nothing is as
 large as it is
 long, for then
 it would be
 equal to its
 own length.

1. logico pro linee (sic) B.

28. multitudinem B.

29. lineam B.

A line may be equal in size to a body; but the body could not be of the same length. Length would be lost by merely turning the body in the sense of breadth.

As for angles, Euclid's definition should be properly understood. If an angle is but a meeting of two lines it is an indivisible point, if it is their union, it is an aggregate of many extended things. But those who would attack my system require to learn what angles are. Divisions of angles into those that conclude a space or only an area; the latter into rectilinear and curvilinear, acute or obtuse; or described on a plane, when one side only may be curved, or both.

et idem esset argumentum de qualibet superficie assignanda. Et de linea patet idem, cum quolibet linea infinitorum punctorum quo ad nos sit alicui corpori equalis cui repugnat esse eque longum cum eodem. Potest etiam deperdere longitudinem per circumlacionem, ut videtur, stante magnitudine. Ymmo magnitudo et parvitas sunt passionis quantitatis; et idem est iudicium de profunditate. Omnia enim ista suscipiunt magis et minus, 2^m relacionem quam superaddunt quantitati.

10

Uterius quo ad anguli descriptionem patet quod diffinitionem Euclidis oportet sane intelligere supra verba. Nam primo videtur ex diffinitione Euclidis quod angulus sit tam contactus quam applicacio linearum; et si sit contactus, tunc indubie est indivisibilis, et potest manere non angulus; et si sit applicacio linearum, tunc est agregatum ex multis applicacionibus extensis. Ideo vellem quod sollicitantes se ad pugnandum compositionem continui ex non quantis per impugnacionem sentencie geometrice de magnitudine angulorum essent primo fundati in noticia quantitatis eorum; quia noticiam *quid est* oportet precedere noticia *quia est* de eodem.

Suposita ergo descriptione angulorum phisica, patet quod sicut figurarum, sic et angulorum quidam est corporeus et quidam superficialis; et superficialium quidam est rectilineus et quidam obliquilineus; et obliquilinearum quidam est in superficie convexa ut anguli sperales; in talibus enim habent 3^s anguli 3^s angulos rectos; ut patet de quadratis extime superficie mundi. Quidam autem sunt anguli acuti obliquilinei, et oblique superficialis; ut anguli intrinseci zodiaci et equinoccialis; et alii anguli huius sunt obtusis; ut anguli extrinseci illis oppositi. Quidam autem anguli obliquilinei sunt in superficie plana; et tunc vel sunt obliquilinei 2^m unum latus tantum; ut angulus continencie vel angulus intrinsecus sibi oppositus; quorum primus causatur ex porcione linee circularis et rectilinee eundem circulum contingentis, et 2^{us} causatur ex eadem porcione linee circularis et dyametri circuli currentis. Aliquis autem est oblique lineus 2^m utrumque

12. intelligi (*sic*) B. 32. 30⁶¹ B. 36—37. 9^{tin} B.

36—39. See pag. 35.

latus tantum; ut angulus causatus ex contactu duorum
 circulorum. Et angulorum superficialum rectilineorum
 quidam est rectus, quando linee recte super se erigun-
 tur; quidam est obtusus, ut quilibet maior recto; et
 5 quidam est acutus, ut quilibet minor recto: et quot-
 libet sunt proporcionabiles divisiones de angulo cor-
 porea, ut patet faciliter adaptanti.

Sed videtur ex descripcionibus supradictis quod qui-
 libet angulus sit multus per totum subiectum, et per
 10 consequens multus magnus. Videtur etiam quod ad
 eundem punctum essent quotlibet anguli; quia quot
 sunt figure sic posite ad datum punctum, tot sunt
 anguli. 3^o videtur quod nedum descripciones Euclidis,
 sed eius sententia, ut plurimum, est neganda.

15 Ad primum negatur assumptum. Pro quo notandum
 quod cuiuscunque mathematici substantia vel natura
 est indivisibiliter situata, et per consequens nullus talis
 angulus est quo ad substantiam suam magnus. Verum-
 tamen 2^{ter} potest intelligi angulum esse magnum; vel
 20 in natura propria quo ad molem, ut angulus naturalis,
 vel rescriptive quo ad basem; ut quicunque angulus
 mathematicus; et sic dicunt geometre omnes angu-
 B 115^b los | rectilineos equales, quorum quecunque bases ter-
 minantes equalia latera indirecte incidencia sunt equa-
 25 les. Angulus enim naturalis est principium mensurans
 posicionem et quantitatem figure angularice, sicut et
 angulus mathematicus est principium eius. Ideo, sicut
 virtus, etiam indivisibilis, dicitur magna respectu prin-
 cipiati ab eadem, sic et angulus potissime, cum sit de
 30 genere respectuum; ut divisivum, proportio, agencia,
 et quotlibet talia dicuntur magna solummodo respective.

Et si queritur de subiecto primo superficialis anguli,
 cum sit accidens, dicitur quod cuiuslibet talis subiectum
 primum est substantia tripunctalis, cuius quelibet duo
 35 puncta constituunt lineam vel basem minimam possi-
 bilem et 3^m punctum possibilem dispariter, tangendo
 utrumque priorum.

Unde patet quod quilibet triangulus minimus habet
 3^s angulos, in quolibet 3^{um} punctorum conalium, quo-
 40 rum quilibet dicitur angularis respectu basis sibi in-
 mediate; et sic angulus mathematicus est situ aliter
 in puncto mathematico, et essentialiter terminative in

Rectilinear
 angles are
 divided into
 right, obtuse,
 and acute
 angles.

Three
 difficulties.
 (1) The angle,
 belonging to
 the whole
 extent of its
 sides, is
 indefinitely
 great.

(2) Any number
 of angles are in
 one point.

(3) Euclid's
 theory of
 angles, as well
 as his
 definition, is to
 be denied.

Answers.

(1) Denied.
 No angle can
 be great, in its
 essence,
 because the
 essence of
 things

mathematical
 is indivisible.
 But we may
 say it has size
 either as to the
 space it
 contains, or as
 to its base.

We may
 also call
 an angle great
 as to its effect.

Where is the
 angle of mere
 area to be
 firstly found?
 In three points
 that touch
 each other,
 of which two
 form the
 smallest
 possible base,
 and the third
 the apex of a
 triangle.

So the
 mathematical
 angle is
 situated at the
 apex, but has
 its essence at

the base of this triangle, and exists accidentally at any part of its produced sides. The solid angle is in the tetragon of four points, the smallest volume possible.

(2) As 'whiteness' may be common to many bodies, so angularity may be common without being multiplied. But we may grant that many angles exist in one point.

base minima bipunctali; accidentaliter autem tripliciter ad quamlibet basem suam. Primum autem subiectum anguli cuiuscunque corporei mathematici est substantia quadrupunctalis, que est corpus minimum possibile. Et proportionaliter dicitur de angulo naturali. Anguli ergo 5 non dicuntur corporei vel superficiales, obtusi, recte vel acuti, nisi quia effectus corporis extensi sunt huiusmodi. Angulus ergo formaliter denominat suum subiectum primum angulatum, et efficienter quodlibet subiectum cuius ipsum subiectum primum est pars. Nec 10 oportet ipsum angulum esse per omnem ipso angulatum. Ymmo sicut non per totum Ethiopem est ita quod ipse est albus 2^m dentes, sed solum ad dentes, sic non per totam figuram est ita quod ipsa habet positionem 2^m indirectum concursum linearum lateralium ad datum punctum, sed solum ad illum punctum. In eodem ergo situ adequato sunt angulus et punctus conalis figure sic angulate.

Et per hoc patet responsio ad 2^m. Sicut enim eadem albedo partis est communis quotlibet corporibus iam participantibus sine eius multitudine; sic motus, angulus, 20 et quotlibet alia accidentia, tam respectiva quam absoluta.

Conceditur tamen quotlibet angulos, tam naturales quam mathematicos, esse ad eundem punctum; sed non oportet quamlibet figuram ad datum punctum conaliter terminatam habere angulum mathematicum 25 immediate supra priorem: et eius mediatas habet angulum immediate supra 2^m; et sic de quotlibet angulis, quoniam constituunt unum angulum naturalem, qui est 2^pliciter divisibilis, ut patet ex dictis de concursu et communicatione linearum, et de quantitativibus angulorum. Unde ad omnem punctum mundi est angulus componens alium, et tamen nullus angulus extenditur per totum mundum, quia non est dare basem aut figuram 2^m aliquid ab eo distante, respectu cuius foret angulus. Sed sicut quidam vocant quamlibet figuram 35 quadrangulam lineam, sic communiter vocarent quamlibet extensam positionem figure ad conum terminantem et circa basem eius, angulum. Sed ista tertia vulgaris significatio terminorum est extra locucionem congruam geometri. Ex compositione ergo anguli mole magni ex 40

36. Perhaps *lineam* is a mistake for *quadrata*m, or some other such word.

angulis inextensis potest patere compositio continui ex non quantis.

Et patere potest preterea quod angulus habet magnitudinem preter molem: quod sic arguitur. Capió | 3^s angulos superficiales, qui equaliter constituunt angulum superficialem rectam, 2^m doctrinam prime Vitulonis, que docet angulum rectum datum in 3^s partes dividere equales. Et sint illi anguli A, B, C. Capió ulterius 3^s angulos superficiales equales, qui in 3^{bis} diversis superficiebus constituunt angulum corporeum pyramidis trilateræ, iuxta sententiam penultime diffinitionis undecimi Euclidis; et tunc videtur quod angulus corporeus dicte pyramidis et angulus rectus superficialis sunt simpliciter equales, quia eorum terciæ sunt equales: quod reputarent adversarii maximum inconveniens. Certum est tamen quod 3^s anguli mathematici superficiales constituunt quemcunque minimum angulum mathematicum corporeum; quia, ut patet ex dictis, quilibet huiusmodi angulus corporeus subiectatur primo in tetragono 4^{or} punctalium in cuius cono situatur, et ad basem tripunctalem essentialiter terminatur; et cum in illa basi tripunctali sunt 3^s lineæ minime, patet quod est dare 3^s angulos mathematicos superficiales terminatos ad differentias, 3^s lineas ad constitutionem anguli corporei requisitas; et sic ex talibus insurgitur ad angulum mole magnum.

Angulus autem corporeus mathematicus non est mole magnus, sed habet *esse* situale in unico puncto cum 3^{bis} angulis superficialibus ipsum principiantibus. Et preter hoc habet *esse* causacionis in quolibet trium punctorum sue basis causantis. Sic enim vere conceditur similitudinem esse subiective in subiecto simili quod informat, et causaliter, obiective, vel terminative, in subiecto, quantumlibet distante, a quo dependet. Et hoc habet angulus mathematicus ultra punctum, cum 3^s omnis punctus sit absolutus, et angulus respectivus. Differt etiam angulus mathematicus corporeus ab angulo superficiali, in hoc quod talis angulus integratur quo ad substantiam ex angulis superficialibus, tanquam eius partibus qualitativis, licet non quo ad molem, sed 4^o tanquam partibus disparium rationum, convenientibus

An angle has magnitude which is not quantitative. Take a right angle; divide it into three equal parts; then compare it with a trigon of which each angle is equal to one of these parts; the plane right angle will thus equal the trigon; which, if all magnitude of angles were quantitative, would be a flat contradiction.

The solid mathematical angle has no dimensions, only position of its apex and essence in its three triangles; also a causative *esse* in each point of its base. An angle has therefore relative, not only absolute being, like a point. The difference between a solid and a superficial angle, is that the former consists of the latter, as its parts.

6. vitulois B. 10—11. trilate' B. 12. 3^e (sic) B. 14. mic B.
39. qu^{vis} B.

6. Vitulonis = Vitellionis. See *Logica*, I, p. 181.

Every physical angle is composed of a great many angles and substances.

The mathematical solid angle has parts, the superficial has none; it can only be divided into the parts of which it is the cause, i. e. the figure that strikes the senses.

(3) Euclid gives a genetic definition of an angle; when two lines meet, they produce an angle. He likewise calls right lines and plane surfaces extensions, says that a sphere is the revolution of a semi-circle, and that a line moved parallel to itself makes a square.

No mathematical angle can be divided as to quantity, but the magnitude of its base can be thus divided.

Every right line may be bisected, and the two sections are properly called equal, so far as our senses go.

in genere anguli; sicut figura componitur ex finitis. Non sic autem de superficiali angulo quocunque. Angulus autem corporeus naturalis quicunque habet quotlibet angulos et corpora, que ipsum principiant; et patet quod non sequitur esse aliquos angulos mathematicos, superficialem et corporeum, coequales, cum primus sit indivisibilis quo ad substantiam, et reliquus habet partes. Ideo angulus superficialis mathematicus non est divisibilis in suas partes, sed respective divisibilis in suos effectus, que sunt partes positionis figure 10 sensibilis.

A 3^m dicitur quod Euclides, more suo, describit angulum in predicacione 2^m causam. Nam ex ipso quod due linee alternate tangunt se 2^m applicacionem figure quam terminant in differenciam, causant angulum ad 15 terminum utriusque; et quandoque econtra diffinit Euclides natura prius per suum causatum posterius; ut lineam et superficiem rectas vocat extensiones; ut patet primo elementorum. Speram vocat transitum dimidii circuli, ut patet libro undecimo; lineam ductam 20 in se dicit superficiem quadratam perficere, ut patet libro 2^o: et sic de | de quotlibet dictis huius philosophi, B 116^b que ignorantes sentenciam universalium ignorabunt. Sensus ergo suus exprimitur per descripciones supra 25 positas, si non fallor.

Nec obviant hec dicta sue sentencie, etsi finem quorundam ipsum communicatum contradicant. Nam licet nullus angulus mathematicus dividi poterit quo ad molem, tamen dividi potest 2^m magnitudinem respectivam captam respectu sue basis, ut docet conclusio 30 primi et quotlibet alie conclusiones eiusdem. Et sic quantamlibet lineam rectam dandam contingit dividere in duas medietates, quarum neutra divisibiliter excedit reliquam. Et omnes tales vocat sensibilis philosophus, satis vere ad sensum suum, medietates equales. Nam, capta qua- 35 cunque linea naturali, contingit significare punctum eius medium naturalem, quia coniunctus utrique parti residue constituit duo equalia, que integrant suum totum. Talis enim punctus naturalis continet quotlibet puncta mathematica. Et sic intelligitur de centro circuli. Nam capta 40

15. \widehat{du}^m B.

34. *Sensibilis*. In the same sense as *physicus*.

dyametro equalium punctorum, nullus punctus mathematicus est eius centrum, simpliciter, sed punctus lineae naturalis. Et per hoc solvuntur conclusiones 3ⁱⁱ libri elementorum Euclidis. Nec capit ymaginatio duo puncta
 5 esse in mediata in eadem superficie, ut linea; ideo negat talia duo esse sensibiliter in mediata, ut patet ex A primi libri. Unde quererem a volente lineam dividere in duo equalia, utrum medius punctus manebit vel corrumpetur post divisionem. Si manebit: quare potius cum una
 10 medietate quam reliqua? et si corrumpetur utrobique, sequitur punctum quemcunque esse accidentalem sue lineae: quod est superius inprobatum.

As imagination cannot represent two points that touch each other, Euclid denies their existence for the senses. If you bisect a line, what becomes of the middle point?

Et idem est iudicium de divisione anguli. Nam nullus angulus mathematicus 2^m molem differre potest, cum
 15 sit indivisibilis quo ad molem. Si enim angulus superficialis quicunque esset divisibilis quo ad molem, tunc angulus contingencie est angulus rectus, et angulus intrinsecus oppositus angulo contingencie essent equales simpliciter: quod contradicit in 3^{ium} Euclidis elementorum. Dividere ergo angulum mathematicum ad sensum
 20 Euclidis est dividere figuram ipso angulatam 2^m lineas pertractas ad basim et conum dicte figure; et illa vocatur divisio anguli in effectum quodammodo similem; ac si quis divideret potenciam vel virtutem individualement in sua substantia ad divisionem sui effectus. Causaliter enim dicit
 25 philosophus, 3^o de Anima, ipsam habere partes virtuales.

No angle can differ from another in magnitude; therefore it is indivisible in that sense; otherwise the angle of tangency would be a right angle.

Ex istis et superius dictis satis patet quod si A, linea mathematica, cancellat B, lineam mathematicam, equallem in medio puncto orthogonaliter; et si, manente
 30 utraque recta continue, sed B (inmota A) declinet successive, quousque fuerit directe supraposita B, mediis punctis continue se tangentibus, quod statim cum A incipit declinare ab angulo recto ad acutum, movendo
 2^m quemlibet eius preter punctum contactus, incipit A
 35 simul tangere multa puncta mathematica in B; quia aliter quemlibet punctum circumstarent infinita puncta, et minimus gradus superioritatis vel cuiuslibet denominationis continue, sicut et quilibet angulus in sua substantia foret in infinitum divisibilis; que omnia sunt
 40 impossibilia; ideo et antecedens.

Thus if the line A bisects B, equally long, at right angles, and then B is turned round till it coincides with A, the central points remaining the same as before, it is evident that A, from the moment it is no longer perpendicular will touch many of the points of B.

Et ex istis patet responsio ad illam famosam rationem contra dictam opinionem de compositione continui

A celebrated argument against our doctrine: the diagonal of a square and its

side would
be of equal
length,
for the number
of points in
both are equal.

If we draw
parallels from
one side of the
square to the

other,
each will
intersect the
diagonal in one
point; so

to each point
of the side
there will
correspond
one point of
the diameter.

We answer
that, as these
parallels
intersect the
diagonal
obliquely, they
will each
touch several
points.

If the lines
touch each
other, some of
the points they
touch will
coincide.

Reply:

1st. These
parallels
would no
longer be
straight.

2nd. They do
not touch
each other.

3rd. Each
parallel
intersecting the
diagonal in a
different part
of its extent,
the points
they touch
cannot be
counted
together.

Here we deny
the
consequence.
One line may
touch only one

ex non quantis, qua probatur ex illa sequi quod omnis
dyiameter quadrati sit equalis | suo lateri; quia, si non, B 117^a
sit A B C D quadratum cuius A dyiameter non sit
equalis A B lateri. Contra: precise tot sunt puncta in
A B sicut in A D: ergo, sunt equalia. Antecedens 5
probatur ex hoc quod si a quolibet puncto A B linee
protrahatur ex transverso eque distanter ad costam
quadrati linea recta usque ad C D, tunc de facto
tangeret quelibet talis in utroque latere quadrati et eius
dyametri unicum et disparem punctum a reliqua linea. 10
Ex quo plane sequitur cum veris quod precise tot sunt
puncta in data dy diametro ut in costa.

Istud argumentum peccat in materia, cum quelibet
datatum linearum oblique et non orthogonaliter dividit
datam dyametrum, et per consequens contingit aliam 15
tangere multa eius puncta, sicut patet ex nota proxima.
Nec ex hoc sequitur aliquam linearum illarum esse
curvam, vel regulariter dyametrum esse duplam, aut
3^{plam} ad costam, propter numerum duplum aut 3^{plum}
punctorum integrancium. Stat enim illas lineas sic sec- 20
tantes dyametrum tangere eadem puncta, cum omnes
immediate tanguant omnia sua puncta reciproce.

Sed argumentatur contra illud, supponendo omnes
lineas de quadratis esse rectas et in eadem superficie,
iuxta petitionem primam primi Euclidis. 2^o supponitur 25
omnes dictas lineas transversales a latere ad latus esse
incommunicantes. Et 3^o argumentatur sic: quilibet
punctus ad dyametrum est captus in aliam partem
alicuius istarum linearum transversalium, sicut et qui-
libet punctus date superficiei quadrate; et aliqua earum 30
habet duo vel 3^a puncta date dyametri, nulla com-
municante cum reliqua. Ergo quelibet habet totidem.
Ex quo sequitur quod omnes ille simul habent in 2^{pl^o}
vel in 3^{pl^o} plura puncta date dyametri quam sunt
puncta alterius lateris iniciativa omnium illarum, et 35
stat conclusio; scilicet, quod quelibet dyiameter est 2^{pla}
vel 3^{pla} ad latus sui quadrati.

Pro isto oportet negare consequenciam. Pro quo
notandum, quod si una illarum linearum transversalium
caperet in partes multa puncta date dyametri, et alia 40

10. vñc B. 24. dcq'9 B.

28. dyamet' B.

38. Pro — con-

sequenciam in marg. B.

non, tunc non esset color in consequentia. Sed sic est in quolibet quadrato sensibili: ergo, etc. Nam in minimo quadrato, sicut et in quolibet figurarum punctorum quo ad nos, dyameter est equalis suo lateri; 5 quia utraque eque punctalis. Tales autem sic, cum sint extra illud subiectum primum geometrie, non sunt directe de eius consideratione. Ideo non mirum si descripciones et proprietates figurarum geometricarum illis non congruant. Et in quolibet quadrato due coste 10 extremales tangunt tantum duo puncta sue dyametri. Alie autem linee intermedie, si ad tantum declinent ab angulo recto quod oportet punctum proximum contactui incidere in suum proximum lateralem, immediatum puncto contactus, tunc tangunt tria puncta de dyametro, et 15 aliter non. Ad quod concipiendum supponatur ex prius declaratis situs esse immobiles, et quemlibet punctum mundi in eadem superficie circumstare 4^{or} puncta, versus directiones 4^{or}. Ex quibus sequitur quod quilibet 4^{or} punctorum immediate circumstancium polos mundi 20 tantum 4^{or} situs describit in die naturali. Et si queritur in quibus instantibus, dicitur a michi probabili quod, cum punctus equinoccialis fuerit in medio inter oriens et meridianum, tunc punctus immediatus polo versus oriens incipit per positionem vel per remocionem B 117^b de | presenti incidere in situm proximum supra polum; et, cum dictus punctus equinoccialis fuerit in medio inter meridianum et occidens, tunc incipit dimittere situm illum et incidere in situm proximum sinistrum vel occidentalem; et sic de ceteris quoad sibi. Quorum 30 ratio est, quia, cum punctus equinoccialis fuerit in medio talis contradictorie, tunc dividit angulum rectum centralem in duo equalia, et per consequens ad neutrum lateris declinat. Et cum nichil potest poni in esse ex contingencia equali, patet quod ratio est abdita apud 35 deum quare potius est in uno situ quam in reliquo.

point of the diagonal, and another several. In the smallest possible square, the number of points (two) is equal for the diagonal and the side; but this is beyond the scope of geometry.

In every square the extremities of the sides touch only two points of the diagonal. The other lines sometimes touch three points, sometimes fewer.

This difference depends on the movement and change of position of the world.

At the poles there are four points touching the central point in a plane surface, and they move only four times a day: when the equinoctial point is equally distant from east and south, from south and west, and so on, the angles being equal at those moments.

14. \widehat{can}^e B.
quod s' B.

18. dras = diferencias B.
31. \widehat{gd}^e B. 32. adnetr B.

29. quadralis? B;

3. *Figuratorum*. I suppose that Wyclif means a square of points, thus $\begin{smallmatrix} \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \end{smallmatrix}$ in which the number of points of the diagonal and the side are equal.

We should not
be ashamed to
confess our
ignorance of
such matters;
it suffices that
we know that
God has
ordered all
things for the
best.

Nec verecundetur quantumlibet subtilis philosophus fatere propriam ignoranciam in quotlibet particularibus, specialiter de finitate nature; ut puta quare Deus pocius produxit hoc individuum possibile nunc quam tunc; quare pocius hoc individuum quam aliud possibile, quare pocius ponit polum articum in B situ quam in C; et sic de quotlibet aliis, in quibus omnibus dicimus quod Deus ordinat istos propter melius ordinis universi. Et istum gradum melioritatis ut plurimum nescimus ex-primere in particulari.

As soon as the
movement
begins, it is
necessary that
the points
should change
places by a
quarter of a
revolution; and
the same is
true of every
revolving
circle, and
lines crossing
each other.
This explains
how two lines
intersecting
not at right
angles,
sometimes
touch by one
point,
sometimes by
more.
Yet the line
crossed is not
curved;
curvity requires
at least three
points, as it
proceeds
from
straightness.

Cum autem inceperit plus declinare ad unum ¹⁰ ^{or} situm semidyametrarium, ratio exigit quod tunc tangat punctus proximus centro vel poli situm proximo indivisibilem illius situs linearis semidyametraris. Et eadem est consideracio de quolibet circulo circumducto, centro ¹⁵ eius quiescente; et de A linea cancellante B in casu superius posito, cum quotlibet similibus. Et ex istis convincere potest intellectus quomodo linea recta, oblique incidens super aliam lineam rectam, quandoque tangit duo puncta sua, et quandoque unicum. Et per ²⁰ idem in eadem superficie tales linee oblique se sectantes, quandoque communicant in unico puncto (ut puta, quando orthogonaliter se secant) et quandoque communicant in pluribus, videlicet quando ^{2^m} medietatem anguli recti se secant, et semper cum acucius sese ²⁵ secuerunt. Nec sequitur ex hoc curvitas alterius linee. Quamvis enim curvitas sit extensa, nulla tamen eius pars situatur in situ punctali, aut in situ bipunctali; sed primo in tripunctali. Ideo oportet quod omnis obliquacio vel curvitas procedit a rectitudine, sicut ³⁰ omnis inequalitas ab equalitate. Quia ergo talia tria punctalia possunt esse eque distanter posita respectu alicuius trium dyametrorum mundi, vel in aliqua eorumdem, ideo stat ipsam servare rectitudinem.

Here we see
that no one
here below can
know what the
proportion of
the diagonal to
the side is;
for no one can
know which
lines touch in
one point only,
and which in
more.

Ex istis patet quod incertum est cuilibet hic vianti ³⁵ de proporcione dyametri sensibilis ad costam sui quadrati, eo quod dyameter, sicut dividit duos angulos quadrati in duo equalia, sic et quotlibet alia particularia per quorum medium incidit ^{2^m} partes: et in tali posicione ignorari oportet que due linee ta- ⁴⁰ liter se secantes communicant in unico puncto, et

que in 3^{bus}; et per consequens ignorare oportet proporcionem, sicut et proporcionem anguli contingencie ad angulum rectum.

Si autem quis theologisat dyametrum mundi oportere constare ex punctis inequalibus, cum argumentatur non esse medium mundi simpliciter; nec quemlibet mundi intrinsecum circumstarent precise 4^{or} anguli recti, eo quod, dempto impari circumferencie, ita esset; et sic diceret totum mundum constare ex punctalibus | pariter paribus, cum aliter mundus non esset simpliciter divisibilis in medietates 4^{as} etc. (et sic de ceteris partibus, quo usque deveniatur ad indivisibilem unitatem); et posuerit insuper quamlibet circumferenciam circuli oportere constitui ex punctalibus pariter paribus, sic quod non est dare simpliciter medium quadre, quin angulus dividitur in duas medietates simpliciter: illi nunquam esset ratio diversitatis quare, pro instanti divisionis anguli recti in duas medietates, punctus semi-dyometri proximus centro erit pocius in uno situ proximo centro quam reliquo.

Illi autem qui 3^o ponunt Deum posse ponere iuxta situs punctales lineares alios situs punctales commixtos sine amocione alicuius situs, esset facile quod dyameter quadrati esset 2^{pla}, equalis, vel quomodolibet aliter proportionata suo lateri. Et tunc nec sensus nec ratio convinceret conclusiones geometricas esse necessarias, nisi ex suppositione: quod credo esse verum, si non intelligatur condicionaliter, vel de subiecto intelligibili, sed actualiter demonstratum. Nec probabit geometer quod inter dyametrum quadrati et costam eiusdem servatur utrobique eadem proportio: scilicet medietas proportionis 2^{ple}; sicut nec probabit quod dyameter quadrati, costa eiusdem, et medietas prima dyametri, sunt 3^s termini continue proportionales. Et per hoc medium sequeretur conclusio. In omnibus enim talibus satis est mathematico quod non sit sensibilis defectus, vel quod sic oportet esse, suppositis suis principiis possibilibus; et ad istum sensum concludit. Ideo sciencia est satis necessaria. Nec scio adhuc aliquam istarum 3^m responsionum efficaciter improbare.

Et per hec patet responsio ad obiectionem geometricam, qua obicitur sequi expositione continui ex non

If we say that the diameter of the world is composed of points unequally distant, denying that there is an absolute central point, and asserting the absolute symmetry of the points of which the circumference consists, there can be found no reason why one point should be in one place rather than another.

Or if we admit that God can add points to those which already exist without taking any away, the proportion of the diagonal to its side might be double, &c., Geometry would then be true only by supposition.

The geometrician cannot prove that the proportion

$\sqrt{2}$

exists everywhere in the diagonal. I have not as yet been able to refute these two last opinions.

Another geometrical difficulty: in this system

one continuous quantity would be to another as one number to another; now this is the denial of incommensurable quantities.

Reply: Whatever is demonstrated for continuous quantities, holds also for the numbers of points of which they consist. But the geometrician does not resolve quantity into indivisible points, and denies that all quantities have a common measure that is itself divisible.

Two lines, sensibly equal, may each contain different numbers of points, which may be prime numbers. Of course, if a line were divisible into two *absolutely* equal parts, this would be impossible.

The senses err very much in their consideration of figures, &c., since no surface can be really square unless the number of its points be a square.

This agrees with Euclid's definition of a square — a line moved at right angles to its own length.

quantis quod qualitercunque est proporcionabile continuum continuo, taliter est proporcionabilis numerus numero; quod repugnat conclusioni XI^o 2ⁱ Euclidis, et conclusioni 26^{te} 9ⁱ libri; et satis expresse diffinicioni 3^e 5^{ti} libri. Videtur eciam contradicere sentencie XIⁱ 5 libri que ponit quotlibet quantitates continuas incommensurabiles, et quotlibet locis ponit multas passiones verificari de continuis que non verificantur de numeris.

Quo ad ista, certum est quod omne demonstrabile in continuis est eciam potissime demonstrabile in discretis, cum totum sit sue partes. Quicquid ergo demonstratur de quovis continuo, demonstratur de numero indivisibilium qui ipsum constituunt. Verumptamen geometer habet pro inconvenienti quod quantitas continua ymaginabilis resolvatur in partes indivisibiles [que non sunt] sue consideracionis, vel quod quecunque quantitates, continue vel discrete, communicent in parte sensibili aliquota utrique. Nec aliter vocant communicantes aut commensurabiles, si communicant in parte indivisibili. Unde nec in 5^{to} nec in 7^{mo} diffinit Euclides partem ut descriptio parti indivisibili conveniat. Non ergo sequitur quod omnis numerus totalis punctorum linee sensibilis est par, cum stat totalem numerum punctorum unius linee et totalem numerum alterius sibi paris esse numeros contra se primos, et per consequens lineas illas ad unum sensum esse incommensurabiles; ut patet ex 29^a conclusione 7^{mi} Euclidis. Si tamen omne continuum esset simpliciter divisibile in duas medietates equales, ut 4^{rius}, tunc indubie sequeretur contradiccio, si cum hoc omne continuum comparatur ex non quantis.

Et ex istis concipit intellectus quantus error contingit sensibus, considerando figuras, equalitates, et alias passiones corporum, cum hoc sit indubie verum quod nulla superficies est quadrata, nisi numerus punctorum ipsa constitutivus sit quadratus cuius radix est numerus punctorum sui lateris. Nam ad istum sensum dicit Euclides quod linea ducta | in se constituit superficiem B quadratam; et si ducatur in se cubice, tunc cubum constituit. Unde, sicut bis duo constituunt primum numerum superficiale quadratum, ita (capta linea pedali)

continens tot puncta quot sunt illius lineæ, constituunt superficiem quadratam pedalem; et continens tot superficies, constituunt cubum pedalem.

Ex quo plane sequitur quod non omnis quantitas cubica vel superficialis constat ex punctis paribus; nec omnis ex imparibus. Patet prima pars ex hoc quod omnis numerus circularis cuius quaternarius est prima radix est impar, ut patet ex natura numeri circularis. Ymmo quilibet numerus quadratus videtur esse impar, et per consequens cum quotlibet huiusmodi numeri sint quadrati et cubici, patet quotlibet huiusmodi esse quantitates ex punctis imparibus constitutas. Et 2^a pars patet de quotlibet aliis numeris quadratis, quorum radix est par numerus.

Not every quantity, whether cubic or square, consists of an odd or of an even number of points.

2^o patet quod non quecumque proportio signabilis est quadrati ad quadratum, et ita de aliis speciebus figurarum. Patet, ex hoc quod qualiscunque est proportio figure ad figuram, talis est numeri ad numerum; sed non qualiscunque proportio signabilis est inter unum numerum quadratum et reliquum: ergo nec inter unam quantitatem continuam quadratam et reliquam. Ex quo patet quod nec corpus nec superficies quadrati potest quelibet augeri vel minorari, servando continue quadraturam.

Nor are all square or cubic quantities commensurable, since numbers of points are not necessarily so;

3^o patet quod ambiguum est philosopho si omnis circulus sit quadrabilis, et econtra: ymmo si alicuius circuli quadratura sit scibilis. Nam, si oportet omnem perfectum circulum constare ex punctis pariter paribus, iuxta evidencias supra dictas, vel supra tactas, patet quod est impossibile aliquem circulum adquare quadrato, cuius radix est primus numerus circularis: et sic de quotlibet aliis que non constant ex numeris pariter paribus. Ymmo patet intendenti quod illo supposito, solum quantitas quadrata cuius radix est quadratus foret circulo coequanda. Si autem ex quolibet numero pari punctorum ultra 10, constat pariter cubus et solum ex tali, adhuc patet illud de quolibet quadrato constante ex numero ipsi circulari. Et ex isto patet quod argumentum buffonis non sequitur ex dubio: *cuiusque*

thus it is not always possible to change the form of a given square, keeping the same square number of points. It is doubtful whether every circle can be squared, and whether the quadrature of any circle can be found.

It by no means follows that, if we can find a circle (or a

1. co^{us} pro continente B. 2. co^{us} B. 7. c'cu² B. 8. c'cu² B.
29. sb B. 31. p'9 B. 36. prt cul9 B. 39. z B. 39. briffonis? B.

number) larger than a given one, and again a circle (or a number) smaller than the same, we can find a circle or number equal to it.

The root of the difficulty is that the number of points is infinite for us in each case, and we do not know whether it is odd or even.

The sensible centre of the world consists of six mathematical points taken together.

Every line can be circled or squared; thus every square can be equal to a circle; but we cannot here go into details.

Another objection: the smallest square (or other figure) possible is a circle.

These infinitesimals are beyond the province of geometry, and the names of squares, &c. do not properly denote them; or rather these bodies are at the same time triangles (squares, pentagons, hexagons, heptagons) and circles;

contingit dare circulum maiorem, dato quadrato, et contingit minorem eodem: ergo contingit dare circulum sibi parem; sicut non sequitur: contingit dare numerum parem maiorem, dato numero circulari, et contingit dare numerum parem minorem eodem: ergo, contingit dare numerum simpliciter sibi parem.

Radix autem ambiguitatis huius materie est ex hoc quod nemo scit de quovis numero sibi infinito, utrum sit par vel impar. Et per consequens non scit de totali numero punctorum mundi sue circumferencie vel dyametri sue, si sit par vel impar; quia videri poterit quod, si numerus totalis punctorum sit pariter par, consequi ad hoc numerum punctorum sue dyametri esse pariter parem, eo quod, diviso totali situ mundi in duas medietates equales incommunicantes, situs centri indivisibilis cum neutra se teneret. Ideo videtur quod 6 puncta mathematica conglobata constituunt cum aliis centrum sensibile; et sic quilibet mundi dyameter foret pariter par, cuius una medietas se teneret cum una medietate quantitatis mundi, et alia cum reliqua. Videtur etiam quod quilibet linea sit circularis, sicut quadrabilis, et per consequens quodlibet quadratum equale circulo, et econtra, si non obsit maxima magnitudo. Totum istud requirit sensibile scrutinium diligenter dispositi, quod iste locus ex tam multiplici non permittit. 25

Et si argumentatur ulterius sequi ex oposicione quod quadratum et qualiscunque figura minima sit circulus, dicitur ut supra quod tales figure minime sunt extra considerationem geometri; ideo descriptiones figurarum quas ipsi ex opposito distingwunt, non realiter illis conveniunt; sed sicut figure aliunde sunt in suis premordiis | confuse, sic figure corporum in suis primariis elementis. Unde prima figura, que [est] triangulus constans ex 3^{bus} punctis, dici potest primus circulus cui insit summus gradus circularis, que est indivisibilis quo ad modum: et illa est simplicissima superficies. 2^a figura est quadratum 4^{or} punctorum, que, posita 2^m 3^s dyametros, constituunt minimum corpus; sed et huic figure convenit circulus, sive spera, et illa spericitas est maxime arcuosa, multiplicata per totum, cum sit primus gradus 40

8. deq'uis B. 25. m^lci B. 30-31. r^atit^t illis g^ut B. 33. est deest B.

et simplicissimus. 3^a figura est pentagonus qui 2^m or if one point
 diversam posicionem potest esse circulus vel pyramis. of the four last
 Si enim punctum aliquem immediate circumstent 4^{or} is not on the
 puncta in eadem superficie, tunc ille punctus est centrum same plane,
 5 circuli habentis duas dyametros tripunctales; et quia pyramids (of
 illud centrum communicat cuilibet earum, ideo est three, four, five
 quolibet 4^{or} semidyametrorum bipunctalis, et circulo and six sides)
 circumferencie ex 4^{or} rectitudinibus et 4^{or} curvitatibus and spheres.
 causata. Si enim 4^{or} punctis, constituentibus primum All these may
 10 corpus, addatur conaliter 5^{us} punctus, tunc erit confusa also be in line.
 pyramis, 4^a figura est exagonum constans ex sex punct-
 tis; et illa potest esse linea, superficialis, vel corpus,
 sicut due proxime, 2^m diversitatem posicionis suorum
 elementorum. Et potest esse superficies 4^{angula}, vel
 15 exagonum; et sic confuse circulus vel triangulus habens
 quodlibet laterum tripunctale; et patet consideranti
 figuras numerorum, de quibus 8 Euclidis et secundo
 Aristotelice Boecii. Et in casu quo sit corpus, potest
 esse spera, vel pyramis, vel exagonum imperfectum. 5^a
 20 figura est eptagonum, ex 5^c punctis constans; et illa
 potest esse linea, superficies, vel corpus, 2^m diversum
 modum posicionis; sibi que competit perfectius ratio
 spere, dum versus 6 differencias circumstant 6 puncta,
 7^m quoad centrum.
 25 Unde 2^m istas 5^e figuras numerorum primorum
 posuerunt antiqui 5^c species corporum simplicium,
 secundum 4^{or} elementa, et 5^{tum} neutrum; et istas 5^c
 figuras appropriarunt ordinate istis 5^c corporibus, ut
 patet per Themistum super 3^{um} celi et mundi. Et ad
 30 exemplar istorum sunt tantum 5^e figure corporee regu-
 lares, ut patet 13 elementorum, conclusione 17^a; et
 hinc sunt tantum 5^c figure repletive loci; ut patet 3^o
 de celo 68^o. Hinc eciam exemplantur 7^{em} species
 speculorum regularium, ut patet libro 5^o Vitulonis, con-
 35 clusione 8. Ex istis colligitur quod prima omnium
 figurarum, quo ad elementarem compositionem, est
 triangulus; et prima ac perfectissima quo ad finalem
 causacionem est circulus. Unde licet Euclides prius

The ancients
 according to
 these five
 figures,
 admitted five
 simple bodies:
 four elements,
 and a fifth
 (primal matter?)
 that was
 neither;
 there are also
 only five
 regular
 volumes;
 and there are
 seven sorts of
 regular mirrors.
 The triangle is
 the first of
 figures as to
 simplicity;
 the circle, as to
 perfection.

18. 2. f.^o ap^{oe} bocⁿ B. 24. q B. 25. a^m B. 27. 5^o B.
 28. ap^rparū B. 29. f^r B. 33. 68^o B.

tractat de triangulis quam de circulis; tamen primam passionem trianguli demonstrat per diffinitionem circuli, innuendo quod circulus sit triangulo prior perfectione causalitatis.

Sense cannot conceive this, and must always give us trouble.

Even our intellect can but confusedly perceive this, here below.

In omnibus istis oportet sensum sollicitari, cum non 5 capiat ista dicta. Licet enim longitudo linee mathematice et latitudo superficiei mathematice capiantur a sensu in aliis, non tamen in subiectis suis primis: sed et intellectum viantium oportet subtilitatem istius materie plurimum ignorare. Necesse est namque duas 10 lineas rectas immediate poni in divisione mundi, et ab eisdem terminis oportet duas lineas indentatas progredi sic, quod una habeat in partem quemlibet datorum punctorum parium linee immediate supponente; et econtra de altera; sic quod, quot sunt combinationes 15 parcium talium rectarum linearum, tot sunt diversitates possibiles linearum equalium terminatarum ad eosdem terminos, sine hoc quod aliqua diversiter sit curvata; sicut etiam corpus mathematicum componitur intrinsece | ex superficiebus, punctis, et lineis, sic stat cor- B 119^b poris mathematici unam terciam esse corporeitatem, 2^{am} superficiem, et 3^{am} lineam sive punctum; et sic de quotlibet combinationibus. Nec est hoc plus inconueniens, sed longe plus patulum, quam quod figura, numerus, vel relacio, componatur ex partibus disparium 25 specierum. Et ratio est, quia subiecta immediata istorum sunt substantie materiales, corporee, superficiales, vel lineares, que omnes (eiusdem speciei specialissime) integrant idem. Ideo oportet quod adequata eorum accidentia coextensa integrent eandem magnitudinem 30 vel figuram. Non autem componitur accidens extensum de accidentibus disparium specierum, que quidem accidentia informant subiecta immediata disparium specierum; quia talis forma foret etrogenia et non simplex.

The greatest possible angle is the angle in the centre of the world, caused by two lines, each of which is tangent to half of its diameter;

Et ex istis patet quod est dare maximum et minimum 35 angulum possibilem; maximum, ut angulum in centro mundi, causatum ex incidencia duarum linearum immediatarum semidyametri mundi oppositis. Minimus autem

21. 3^{am} B.

38. o^o B.

10. *Intellectum . . . ignorare.* As if to illustrate this truth more clearly, Wyclif gives us a long paragraph that seems incomprehensible. There is no doubt, however, that there are mistakes in the text; as, *supponente* (l. 14), agreeing with nothing.

angulus est figure cuius basis est bipunctalis, et cuspis quantumcunque linealiter prolata. Angulus autem contingencie datur, sicut et quicumque alius corporeus; et cuilibet angulo in porporcione finita noscibili, si non
5 obesset ignorantia comparandi.

Quotlibet sunt talia argumenta, quibus multi nituntur inpu gnare dictam sententiam. Sed ex predictis sumi potest responsio ad maiorem partem arguciarum quas alii multiplicant in hac parte. In ista namque materia
10 particularius et diffusius sum disgressus, ut hic dicta occasionem dent posteris ad considerandum subtilius compositionem continui ex non quantis.

Tercio, videtur sequi quod nichil potest rarefieri, nec duo corpora coextendi, cum materia prima non potest
15 componi ex suis partibus intensivis, et sic non esset dare situm corporis subtilis, immobilis, quem ingredi potest quodcunque corpus glorificatum, ut theologi lo-
cuntur. Nec essent elementa in mixtis, sed corpus quanti-
tative compositum ex non corporibus, et motus ex non
20 motibus, et esset status in utroque termino lacionis motus.

Hic dico quod dupliciter est rarefaccio intellecta: primo modo, quod corpus occupans situm corporeum sine adquisicione materie successive occupet situm
25 maiorem ad omnem eius punctum per egressum parcium intensivarum materie, vel quomodocunque aliter. Et correspondenter de condensacione. Sed talem rarefac-
cionem vel condensacionem credo non posse esse, sicut nec rarefaccionem infinitam vel condensacio-
30 nem ad punctuale. Et sic de multis varie ymaginatis in ista materia. Non enim potest aliquid rarefieri, nisi vel per extensionem, vel per evaporacionem materie inhibito corpore alieno; et econtra de condensacione.

Unde 2^o modo dicitur aliquid rarefactum, quod sine
35 pluri sui materia partes eius ponuntur extensius per intrinsecam occupacionem corporis alieni. Sic enim spongio compressa dilatatur per ingressum aeris; et simile est iudicium de lana, farina et cinere, et quotlibet similibus in quibus est intercapedo notabilis corporis
40 continentis. Econtra autem, condensatur corpus, cum arte conprimitur extruso corpore alieno, ut aqua vel

the smallest has two points for its base, and its apex as far off as possible.

We have now answered the principal arguments drawn from geometry, and have gone into this question more at length, that it may be properly studied.

Third Objection.

a) No rarefaction or condensation is possible;

b) nor any space through which glorified bodies can pass;

c) the elements are not in their compounds; a body, a movement, is made up of that which is neither.

Answer.

Rarefaction and condensation may mean that, without any addition or loss of matter, a body may occupy more or less space; which I consider to be impossible.

Or the words may signify that a body occupies a greater or less space on account of the presence or absence of another body;

1. c^usp^u B.

2. ptelata B.

3. datus B.

10. deta; B.

aere; nec aliam rarefactionem vel condensationem convincit ratio, experimentum vel auctoritas.

It is foolish to believe that a house is really filled with smoke and no air, or that nothing but mist can fill a large space.

There are a great many interstices filled with subtle bodies, air and water. All bodies are said to have pores, even glass; this must be so, as the lighter elements in every compound fill its pores.

Rarity and density sometimes signify the spaces left between the parts of a given body, and sometimes the bodies which occupy those spaces. Aristotle and Gilbert de la Porée do not make this distinction. In the first sense, only compound bodies are rare or dense; in the second the sky is the most rarefied, and the earth the most dense of all things. Rarity is in direct ratio with the proportion of the rare element in the compound, and in inverse ratio with that of the dense element,

Unde fatuum est credere quod, stamine humido, unctuosus, vel alio combustibili resolutus in fumos, tota domus impleatur fumis huiusmodi sine commixtione 5 aeris inclusi. [Et idem est iudicium de nebula exalata, B 120^a que videtur sensui decepto occupare regionem notabilem sine commixtione corporis alieni. In omnibus enim locis in quibus fiunt tales motus, sunt corpora subtilia commixta cum materia terrestri, ut aer vel aqua. Nec 10 est dare in loco nostro, de aliquo illorum, partem sensibilem que sit elementum purum, sed est quidam imperfecta mixtio ubique locorum nostrorum. Unde Urso et alii philosophi ponunt omne corpus esse porosum; in tantum quod philosophus dicit vitrum esse 15 porosum; quod etiam oportet concedere, cum elementa oportet habere loca propria in mixtis, et per consequens iuxta elementa grossa oportet ponere elementa subtilia, quorum situs porus vel porositas nominatur. 20

Unde notandum quod rarum et densum dicuntur equivoce; nunc de positionibus mixtorum, quorum partes sparsim aut unite iacent cum mixto corporis alterius speciei; et nunc de subtilitatibus aut corpulenciis, quibus corpora dicuntur subtilia vel terrestria. Et in 25 ista equivocacione laborant Aristoteles et Gilbertus Porretanus, hoc est, auctor 6 principiorum. Quorum primus ponit raritatem et densitatem esse posiciones, et non ponit ipsas esse qualitates. Primo modo loquendo, possunt raritas et densitas solum mixtis competere. 30 Sed 2^o modo celum est rarissimum; et sic gradatim usque ad infimum elementum, ita quod terra pura sit summe densa, et celum purum summe rarum. Et certum est quod isti sensus sunt valde equivoci, et pro ista materia cum diligencia memorandi. Raritatem 35 autem primo modo dictam dixi quondam attendi penes magnitudinem situs quem rarum cum corpore alieno commixto occupat in comparacione ad peneitatem sue materie; sic quod raritas positive intelligitur quo ad situm, et privative quo ad multitudinem materie. Econtra 40 autem densitas privative quo ad situm et positive quo

ad multitudinem materie. Unde non opponuntur privative, sed quodammodo relative, ut magnum et parvum, intensum et remissum, cum ceteris similibus.

Sed obicitur per hoc quod, iuxta hanc viam, quodlibet elementum, proportionaliter ut esset maius, continet plus de materia. Consequens falsum. Probatur 3^r. Primo, quia tunc ignis iuxta communem proporcionem in 1000^{lo} plus contineret de materia quam terra. Patet deduccio, supposito quod omne elementum superius sit 10^o proximum inferius 10^{lum} quantitate. Consequens tamen falsum; quia elementa, ut superiora, minus habent de materia et plus de forma. 2^o, quia tunc omnia corpora simplicia essent precise eque densa et eque rara: consequens contra communem scolam que 15 ponit ignem in ea proporcione rariorem terra, in qua proporcione est ea maior; ut sic servetur equalitas multitudinis sue materie. 3^o videtur esse contra experimentum, quo experiuntur de quantumlibet parvo denso generari quantumlibet magnum leve: ut ex uno pugillo 20 aque, 10 pugilli aeris; et proportionaliter de aliis elementis, in quibus videmus materiam duci ad circumferenciam, sicut econtra in generatione aque ex aere, ducitur ad centrum: ut patet in pluvia. Cum ergo non sit dare vacuum, sequitur quod elementum purum 25 superius sit naturaliter inferiori rarius.

Ad primum conceditur conclusio principalis. Et ulterius conceditur quod, supposita proporcione tacta unius elementi ad reliquum, ignis est in 1000^{lo} plus habens de materia quo ad multitudinem quam terra; et cum 30 omne elementum proportionaliter habet de forma ut de materia quo ad multitudinem, patet quod in 1000^{lo} habet plus de forma, et proportionaliter de aliis elementis. | Nec derogat hoc perfeccioni mundi, sed potius 120^b attestatur quod plurimum sit de elemento perfectissimo, 35 et minimum de elemento imperfectissimo integrante. Verumtamen elementa ut inferiora plus habent de condicionibus materie, et elementa [ut] superiora, plus de condicionibus forme: ut terra inter omnia elementa est

It is urged that in this view, the quantity of matter in an element would depend on the space it occupies. This is false. For, 1st, fire would contain 1000 times more matter than earth, if we grant that each element has ten times more quantity than the one just below it. But the elements contain more of form and less of matter, according as their place is higher. 2nd: All elements would be equally dense: which contradicts the whole School. 3rd: It contradicts experience a little water generates much steam. Answer 1st. We admit that, granting the supposition, fire has 1000 times more of matter than earth; but also 1000 times more of form. Thus the most perfect element is the most abundant.

6. gus^m B.

34. perfectissimum B.

37. ut deest B.

8—10. 1000^{lo} 10^{lum}. We must remember that the *natural* place of each element was as follows; *earth*, nearest to the centre; then, water; then air, and fire last of all.

Thus earth is
the most apt
to receive
impressions,
most palpable,
least active and
least productive
of movement;
while the
superior bodies
are less mobile,
and more
transparent.

maxime possibilis inpressionibus peregris, ideo ordinavit
naturis ipsam constantem in medio mundi ad terminan-
dum copiosius incidencias varias angulares luminum
celestium. Unde est tactui naturaliori sensuum nosci-
bilibior, minus activa et motiva; que omnes noscunt 5
esse condiciones materie et a condicionibus forme
plurimum elongate. Econtra autem corpora superiora
sunt paucioribus modis mobilia, perspicua ad recipien-
dum lumina celestia, ut sic sint media ad modum cor-
pora terrestria.

10

The first heaven
can move only
with one
simple motion,
the others
with more;
but none can
be moved
against their
nature.
The sphere of
fire is the most
like that of the
sky, and so
downwards.

In tantum quod primum celum ponitur moveri unico
motu simplicissimo, et alii celi inferiores pluribus.
Omnes celos tamen ponunt philosophi exemptos a
violencia, in spera servare eundem situm totalem, nec
aliqua materia motus habente contrarium transmutari. 15
Et de spera corruptibilium ponunt regionem supremam
ignis multum conformem superioribus lacionibus, et sic
gradatim usque ad terram: in tantum quod propter
elongacionem istorum superiorum a sensibus, quidam
ponunt ipsa vacua, alii puras formas, et alii corpora 20
multum formalia. Unde lux, color, et huiusmodi sunt
qualitates vitales, cum quibus anima intellectiva, suprema
forma naturalium, copulatur corpori tanquam forma
et motrix. Sic enim homines plus habentes de spiritibus
lucidis sunt magis ingeniosi; et in luce et claritate 25
proportionali extrinseca tam homines quam bestie
naturaliter delectantur, horrentes tenebras; cumque calor
naturalis et humidum subtile extincti fuerint, cessat
animacio qualitibus mortificantibus ad centrum ducen-
tibus. Ex multis talibus potest attendens convincere 30
quomodo elementa superiora plus habent de condicio-
nibus forme, etsi longe plus habent de natura materie.

Sight,
colour, &c. are
vital qualities,
by which the
intellectual
soul is joined
to the body as
its mover.
As men who
have more
lucid spirits
are more
intelligent,
and all animals
love light,
so the
extinction of
natural warmth
and moisture
causes death.
2nd. It is quite
the contrary.
The superior
bodies have
more rarity
and
transparency;
the inferior,
more opacity
and density.
But, in
the sense of
closeness of
particles, only
compounds
are rare or
dense.

Ad 2^{am} racionem, dicitur quod oppositum sequitur,
cum raritate, que est qualitas superhabundantis, dyaphana
[excedunt]; et inferiora, ut excedunt in oppacitate, ita in 35
densitate, que est qualitas. Non sic quod in uno corpore
equalis quantitatis sint punctalia spissius posita quo ad
locum quam in quolibet sibi pari. Et quo ad raritatem et
densitatem, que posicionem sonant, multas implicia ipsis
participant extra mixta. Pro mixtis autem sunt elementa 40
superiora magis pauca, et per consequens rarius posita.

1. pe'gris B.

34. excedunt deest B.

8. *Perspicua*. The "crystallines", for instance.

Unde, sicut semen est rarum in terra, dum paucum
semper gignitur in magna area; fides autem virtus est
rara in populo, dum in multo populo sit parum fidei,
sic in mixto terrestri est parum ignis aut aeris, dum
5 natura paucos igniculos spargit cum multo terreo. Nec
oportet quodlibet elementum in mixto continuari cum
alio sue speciei. Nec obest tali dislocacioni quod cor-
puscula distancia constituent unam substantiam cor-
poream; quia res communes dicunt nunc colleccionem
10 suorum suppositorum, et nunc dicunt simpliciter naturas
huiusmodi, sic quod tam homo quam materia prima,
etsi partes dividantur ab invicem, manent perpetuo; et
sic elementum, quantumlibet fractum in minucias in
mixto, manet continue eadem substantia. Et per hoc
15 patet responsio ad communem conclusionem qua que-
ritur utrum elementum mixtum sit rarum, vel totum
compositum ex elementis. Nam utrumque est rarum
B 121^a communiter, | sive elementum sit unum continuum per
totum, sive discretum minutanter sparsum. Et utroque
20 est multitudo parcium rari, subiectum raritatis, quo
extenditur modo suo.

Ex quo notandum quod elementum quodcunque,
commixtum cum altero, est precise eque rarum vel densum
in mixto, sicut foret sine mixtura quo ad raritatem vel
25 densitatem 2^o modo intellectas; quia ad omnem eius
punctum intrinsecum correspondet tanta raritas vel
densitas absoluta. Sed super huiusmodi raritatem habet
raritatem respectivam de genere posicionis, quam non
haberet, si esset a quolibet commixto penitus depuratum.
30 Unde, ad concipiendum talem commixtionem, oportet
primo capere unam multitudinem corporum disparium
specierum, constituentem quoddam unum; 2^o oportet
attendere ad totalem situm quem occupat talis globus;
et oportet 3^o attendere ad quantitatem partis illius
35 situs occupate per unum illorum, et penes paucitatem
talis multitudinis disperse in comparacione ad quanti-
tatem loci oportet attendere illius multitudinis raritatem.

Unde raritas respectiva non solum dicit posicionem,
sed eciam relacionem ad mixturam [et ad] constituencia
40 quoddam unum; quia stat eandem terram innotam
quo ad situm esse respective raram, et desinere esse

Seed is rare
in the ground,
when there is
little on a wide
extent; faith is
similarly rare
in a people,
and in a
terrestrial
compound
there is little
fire or air,
when their
proportion to
the amount of
earth is every
small.
This breaking
up of the
elements does
not destroy
their
substantial
unity.
Both the
element and the
compound are
thus rare.

The element is
in the
compound just
as rare or as
dense as it is
out of it,
though not in
the sense of
porosity or of
closeness;
but it is also
porous
when not
completely
pure of any
mixture of any
other element.
Take a mass of
different sorts
of bodies, note
the space
occupied by
the whole, and
by each part
of a different
sort: thus
alone can we
judge of its
density.

1. *fe*^m B. 2. *git*^r B. 23. *mixtum* B. 33. *gleb.* (l) B. 37. *atten-*
dere illius multitudinis oportet B. 39. et ad *deest* B; *ib.* *gstic*^{cia} B.

It is quite false to fancy that the rarer any element is, the less of matter it contains. sic raram per gravacionem terre ex commixto relico elemento. Unde falsa et infundabilis est ymaginacio qua putatur elementum, eo quod rarius, eo paucius materie continere; ut precise tanta sit multitudo materie spere ignis, quanta est multitudo materie spere terre,⁵ vel alterius elementi.

3rd. There is no experience where the senses err. I once was so foolish as to think that a pigment mixed with earth was coextended with it, because the colour was apparently every where. Ad 3^m dicitur quod error sensus excludit experientiam; nam errando putatur quod gravatum manet utrobique inmixtum corpori alieno. Unda ad tantum desipui quod putavi zimare, id est videre eciam vel alium¹⁰ pulverem colorantem, cum terra liquata vel alio miscibili coextendi; quod tamen est error intellectivi maniacus, cum minuta corpora iuxta posita causant fantasiam coloris disparis; sic quod credens solo sensui iudicat quod per totum subiectum fit dispositio uniformis,¹⁵ sicut in mixturis pannorum et quotlibet aliorum artificialium contingit fieri: multo magis ergo in subtiliori composicione nature. Et isto modo contingit de omnibus qualitatibus²¹⁸ vel formis resultantibus, quod est dare mixtum agregatum eis subiectum; et non cuilibet parti²⁰ quantitative subiecti sui primi correspondet appropriate pars aliqua talis forme; sed satis est quod cuilibet parti quantitative illius nature correspondeat talis forma. Sic ergo, quando lignum comburitur, partes ignee et aeree sparguntur superius, et commixte cum medio manent²⁵ continue eque magne, etsi exalerentur usque ad cel- situdinem spere ignis. Nec credo quod experimentator ex noticia sensuali convincet oppositum.

The forms resulting from combination are not quantitatively everywhere in the compound. When wood is burnt, the fiery and gaseous parts ascend on high, but never become larger than they were.

In this case a great quantity of fire and air is generated, and seek their natural spheres, while the previous form (of wood) perishes. Heat unites homogeneous and disperses heterogeneous substances.

Hic tamen ingeniatur natura, quod mixtum, multum terre habens, dummodo habeat parum ignis vel aeris,³⁰ cum sint per contrarium dissolutum, tunc generantur multe minuticie ignis et aeris; et ipse, cum aliis quadam violencia catenatis, petunt 2^m multas dyametros loca naturalia, pereunte forma superaddita continente. Sic tamen congregat calor homogenia ad invicem et³⁵ disgregat eterogenia ad invicem, dans generato proporcionaliter de loco dicto, ut de forma. Econtra autem in resolucione gravium que 2^m angulum descendunt ad centrum. Et, propter istam intercepcionem medii, inter levia que 2^m dyametrum moventur ab angulo,⁴⁰ et extrinsione medii inter gravia que moventur ad

1. 9th B.
vto tamen (!) B.

4. otine' B.

10. gimar' i. vide' et^o B.

35. cum

angulum versus centrum, creditur quod hinc inde sunt
B121^b absoluta | raritas et gravitas adquisite, computando cum
summo aereo totum medium interceptum.

Ex istis facile est videre quomodo pluvia gravantur;
5 nam nubem vel unbeculam, sive nebulam, in qua sunt
4^{or} simplicia cathenata, dissolvit nunc calor, nunc
frigus; et, segregato subtili terreo ratione conveniencie
cum igne et aere, exsudat aqua formam sphericam.
Et quia deficit sustentans, quo usque ex illis guttilis
10 aqua notabilis magnitudinis sit unita, ideo guttatim
descendit secundum formam maiorem aut minorem,
proportionaliter ut exalacio commixta celerius vel tardius
segregatur. Aquam enim, ratione sue fluxibilitatis, stat
colabi: sed terra, ratione constancie et siccitatis, diu-
15 cius cathenatur.

Ex istis colligitur quod nullum corpus potest esse
maius aut minus quam prefuit, nisi propter adquisicio-
nem aut deperditionem materie, quamvis putatur quid-
libet rarefactum esse maius quam prefuit, ignorando
20 situs quos perdit intrinsecus, sicut et ignoratur com-
mutacio situum extrinsecorum pro intrinsecis in par-
tibus condensati. Et patet quod vera sententia de rari-
tate et densitate non obviat huic vie.

Uterius videtur michi probabile quod non est possi-
25 bile duo corpora coextendi, cum nulla materia prima
potest componi ex suis partibus intensivis. Patet sic.
Conclusio opposita non posset verificari, nisi materia
punctalis componeretur ex partibus intensivis; et tunc,
rarefacta materia vel condensata per totum, vel rare-
30 fazione vel condensacione durante per tempus, ut
adversarii locuntur, sequitur quod corpus motum in
infinittum rarefieret, vel in infinitum condensaretur, ante
quodcunque instans signabile; quia si non, da A pedale
terre uniformiter rarefactum per horam 2^m totum, et
35 patet (cum in quolibet instanti illius hore exhibit a quo-
libet punctali materie unum aliquod iuxta positum)

How rain is
formed;
sometimes heat,
sometimes cold,
dissolves the
clouds; the
subtle
terrestrial part
goes off with
the air and fire,
and water
remains, which
takes a
spherical form,
larger or
smaller,
according as the
dissolution is
more or less
rapid.

It is clear that
whenever a
body takes
more room
than it did, it
is because of
particles
added to it;
and the
converse is true
for
condensation.

I do not admit
the possibility
of two bodies
occupying the
same space.
If that were
possible,
matter must
be more or
less intense,
which is not
admissible;

1. hīc B; *ib.* m B.8. aliquando *pro* aqua B.

13. Aqua B.

14. colabī B.

26. One great division of *parts* is into extensive and intensive parts. Matter, as such, must be extended. Heat, cold, intelligence, virtue, etc., having no extensive parts, and yet admitting of more or less intensity, are said to be made up of intensive parts.

quod unice quodcunque instans dandum erit totum
 infinicies quo ad nos duplicatum in magnitudine; et
 opposito modo sequitur de condensacione. Illud patet
 in paucioribus, ponendo quadrupunctale, si sit possi-
 bile incipere per totum rareferi, cum hoc quod non 5
 incipiat rareferi ad sui duplum; et patet iuxta com-
 munia principia adversancium quod hoc incipit esse
 maioris quantitatis quam prefuit, et cum non sit ratio
 quare una medietas, quin per idem et quelibet, sequitur
 quod hoc incipit esse 2^{plum} ad illud quod prefuit: et 10
 eadem est ratio de condensacione. Ex quo patet quod
 repugnat composicioni continui ex non quantis quod
 aliquid per tempus vere continuum rarefiat vel conden-
 setur per totum, in adquirendo vel deperdendo continue
 quantitatem. Nec scit philosophus fundare casus cal- 15
 culatorios istius materie, in quibus quondam multum
 inaniter insudavi.

that is, it
 contradicts my
 system of
 composition of
 the Extended.

No
 philosophical
 argument has
 value
 against this
 theory.

b) Theological
 arguments.

(1) Absolute
 (i. e. spiritual)
 forms can be
 coextended
 with matter;
 therefore,

a *pari*, matter
 with matter.

(2) Glorified
 bodies are
 coextended
 with the
 medium

through which
 they pass.

(3) Position,
 an absolute
 accident,

might possibly
 exist by itself;

if so, God
 might coextend

two material
 substances in
 that space.

An infidel
 logician
 would say that
 one absurdity
 here proves
 another; but
 Catholics must
 answer
 differently.
 Others say:

Sed pro fundacione parcium intensivarum materie,
 argumentatur theologice isto modo: forme absolute,
 tam substantiales, quam accidentales, possunt ad invicem 20
 cum materia coextendi, cum ergo idem sit iudicium de
 substantiis materialibus, eo quod forme huiusmodi
 poterunt per se esse, ergo per idem materie poterunt
 coextendi. 2^a consideracio est de glorificatis corporibus,
 que ponuntur sicut lumina cum medio coextendi. Et 25
 3^a consideracio est quod situs aut locus, cum sit acci-
 dens absolutum, potest de dei omnipotencia per se
 esse; sicut conceditur de corporeitate et aliis quotlibet
 quantitibus, que videntur magis a substantia depen-
 dere. | Cum tali ergo loco prius vacuo potest Deus B 122^a
 coextendere substantiam vel quodlibet accidens sensibile,
 ex pari evidencia duas materias; cum repugnancia, si
 qua foret, oriretur ex impossibilitate coexistencie dimen-
 sionum in eodem situ illis adequato, vel ex duorum
 indivisibilium possibilitum per se esse coextensa in eodem 35
 situ indivisibili.

Ad ista diceret logicus cui non esset cura de creditis
 nostre legis, quod impossibiliter petitur antecedens pro
 alio impossibili inducendo. Sed quia necesse est totam
 fidem catholicam esse veram, ideo oportet professores 40
 huius fidei aliter respondere. Quidam autem dicunt

1. lince B.

4. fi^t B.24. 9fi^{to} B.26. 9fi^{to} B.

quod assumpta, cum sunt supernaturalia vel miraculosa, non subiacent iudicio rationis; ideo est satis ipsa credere, nec oportet rationibus impugnantibus respondere, nisi forte responsione illa famosa vulgarium quod Deus, cum sit omnipotens, potest huiusmodi licet ignoremus misteria faciendi et subtilitatem obiectibus contrariis respondendi. Sed illud non placet michi, quia per idem posset poni opinative quodlibet impossibile, si non dent expectari rationis iudicium, nec argumentorum oppositorum solutio.

Ideo, supponendo necessitatem fidei ac eius probabilitatem 2^m singulas eius partes, suppono 2^o pro descriptione quid nominis, duas res situatiter coextendi quando per locum aliquem dimensionaliter pertenduntur. Hoc enim sonat iste terminus *coextendi*. Ex quo patet quod quotlibet accidentia contingunt per idem subiectum situatiter coextendi. 3^o dico quod minor primi argumenti est impossibilis, et radix multorum errorum infundabilis, si non fallor. Si enim materia aut forma substantialis, materialis, vel accidentalis, poterit per se esse, tunc haberet quelibet talis propriam dimensionem, locacionem, et cetera accidentia; vel omnis res foret substantia, vel esset necessarius processus in infinitum in generibus accidentium; ut alias diffuse arguam. Non ergo in infinitum rara est terra ad quemlibet terre punctum, nec suscipit substantia magis aut minus in sua essentia, que est forma. Et idem iudicium de quantitate, ubicacione et situ, que omnia oportet componi ex suis partibus intensivis, si per eundem situm possunt coextendi res omnino distincte, quarum quelibet pars minus potest esse sine coexistencia partis alterius; quia, hoc dato, forent huiusmodi accidentia coextensa; et cum sunt intrinsece presupposita ad accidens rationale, relinquitur quod qualitative aut intensive componunt ipsum; quod tamen superflueret, cum primum officium quantitatis vel loci sit quantificare; quod eque fieret, si non componeretur ex suis partibus intensivis. Inconveniens etiam videtur quod una pars intensiva numero sit actuata forma ignis, et alia forma terre; et

We must not judge faith; we simply believe, and answer no objections drawn from faith. But I object to that, because any absurdity might be maintained thus.

So admitting the necessity and reasonableness of faith, I take coextension to signify the dimensional existence of two bodies in the same space; and affirm that Argument (1) is impossible. Any substance or accident existing by itself must have its own dimensions and other accidents; so all would be substance, or we should have accidents *ad infinitum*. Earth is neither infinitely rare, nor can it become more or less so; and the same may be said of quantity, location, and position. They would have to be composed of intensive parts; quite unnecessarily, for they only exist to give dimensions. Nor can one intensive part of the same

5-7. licet—respondendi (sic) B. illegible B.

23. ntis pro necessarius; very

20. *Materialis*. From here to f. 176, end of Logica, the MS. is written in a very bad, scrawling, flourishing hand.

be the
form of water,
and another the
form of fire.
According to
that theory,
all bodies
would be
equally dense.

sic de ceteris, quia materia dicitur relative ad materia-
tum. Ymmo, cum materia sit eadem essencia cum
composito, sicut et forma, si essent 4 forma extense
per eandem naturam, singulum illorum elementorum
esset singulum; | et cum qualitas aut quantitas per se B 122^b
existentes haberent proprias densitates, per idem etiam
in composito, et sic essent omnia corpora eque
densa.

As for (2), it is
more difficult
to answer;
we may
suppose that
the substance
of the sky gives
way on one
side, so that
the glorified
body may pass.

Some
philosophers
deny, but
without proof,
that any
foreign body
can be thus
part of the sky,
because the
sky, being
absolutely
pure, is
incondensible.
A difficulty;
nothing could
be moved
without a
movement in
the whole
world;
for every point,
touching its
neighbour,
would cause
it to change
its place.
But this is
avoided by the
circular
movement of
the points
disturbed.
When a stone
falls, there is a
circular
movement of
the air round
it.

So in the
ascension of
glorified bodies,
the rapidity of
movement of

Quo ad secundum, quod est michi plus difficile,
potest dici tripliciter: primo, quod celum cedit medium 10
sublimari, et sic corpus sublimatum ascenderet usque
ad confinium mundi; tunc cedit a latere et non ex-
tumesceat, propter nature regulam limitantem. Philosophi
autem ponentes nullum corpus extraneum cum celestibus
commisceri, ponunt nimirum quod celum non potest 15
condensari vel rarefieri, sed fundamentum est falsum,
licet inexpertum sit eius oppositum; nec videtur cessio
celi plus repugnare nature quam cessio ignis vel aeris,
cum talis cessio non arguit densitatem. Sed videtur
generaliter quod nullum corpus potest moveri localiter, 20
nisi ad omnem punctum mundi pars eius localiter
moveretur; quia da quod non, et quod post quantitatem
tocius mundi A punctus mutetur ad situm sibi inme-
diatum, cum hoc quod aliquis punctus maneat inmotus
(et voco omnia puncta mota; oportet enim esse multa, 25
cum nullum potest expectare aliud in eodem situ
proprio) videtur quod quodlibet expellet proximum, et
sic non remanebit aliquid inexpulsum. Pro illo dicitur
quod conclusio non sequitur. Nam motus circularis
salvat illam instanciam; ut possibile est quemlibet punc- 30
tum vasis vel loci dati circularis mutare situm suum,
uno insequente reliquum circulariter, cum hoc quod
non extra datum situm, quantum ad hoc pertinet, fiat
motus. Et hinc credo quod ad motum rectum lapidis
vel alterius concucientis causatur in medio tremor cir- 35
cularis, sicut in tribus elementis nostris et mixtis in
eis concussis sensibiliter esset videre; et si non esset
talisis circulacio, moto uno localiter, omne corporeum
moveretur. Nec est vis, quam celeriter circulus per
totum moveatur, ut quod motus celi in tali ascensu 40

6. pp'as B; *ib.* defites B.
tatem(?) B. 30. sanat B.

11. subluari B.
39. qua B.

22. 9m^{te} = communi-

corporum perturbetur, quia est dare statum corporum quo ad motum. Nec sequitur motum astri perturbari in tali ascensu, licet ex quolibet motu recto sequitur circularis. Quando autem erit generalis assumpcio, 5 stabit celum, quantum nos possumus sensu convincere. Nec repugnat quod sit talis motus circularis insensibilis, cum tamen delectabilis sit beatis. Secunda responsio dicit quod est dare quantitatem supranaturalem, a qua unum corpus erit penetrativum alterius, ut sint con- 10 formiter per eundem situm coextensa. Sed videtur michi quod illa opinio sit minus gravis, cum per idem posset qualitas disponi, ut sint quotlibet coextensa. Et stant B 123^a omnes rationes facte contra coextensiones | materiarum, corporum, vel formarum. Deus enim prebet unam talem 15 materiam coextensam cum alia connectere, cum alia componendo, sicut et quamlibet partem quantitativam unius posset ponere cum parte alterius; quo facto, foret una composita intensive; et sic difformis tam substantialibus quam accidentalibus; potissime cum, ad 20 compositionem quantitatis cum extensis suis terminis, sufficit immediacio terminorum.

Tercia via dicit quod omne corpus plene sublimatum potest penetrare corpus celeste vel aliud dyametaliter sine hoc quod continens sibi cedat. Verumtamen, in 25 tali penetracione est novi situs generacio utrobique, cum utrumque occupat sibi proprium, sicut sunt incommunicancia quantitate. Sed illud videtur difficile propter tria. Primo, quod non videtur ratio quare Deus posset spissius ponere in parte superiori mundi corpora 30 sic locata, cum hoc quod mundi convexitas sit immota, quin per idem potest ponere quodlibet corpora loco corporum sublimatorum, et alibi, stante quantitate mundi equali continue; et tunc nullum oportet ponere vacuum vel situs noviter generatos ex motu recto. Et per idem 35 mundus posset recte pelli, generando situs consequentes ad motum. Secundum videtur mirabile quod aliquod punctum potest noviter poni distancius ad polum quam ponitur idem punctum, et aliquod punctum potest poni propius, sed nullum precise eque prope. Nam si precise 40 eque prope, per idem potest poni corpus in toto conformiter ad tria posicionis principia; et per consequens adequate in eodem loco: quod repugnat poni. Tercio

particles in this circle would not hinder any astral movements. And at the resurrection, the sky will no longer move, or will move insensibly. We may again suppose that one body may compenetrated another by a supernatural quality. But I do not approve of this answer, which admits the possibility of compenetration, and is open to all the arguments against it.

Or we may finally say that a glorified body can penetrate any other body, without its giving way, because, having a new mode of being that does not come in contact with the sky, there is produced a different site for it. But *first*, if a glorified body can pass on to the outside of the heavenly sphere, why not other bodies that are not glorified? This would bring other difficulties to the front. Again, how can one point be nearer to the pole than itself, or farther from it, but no two points equally near?

12. desponere B.
cipue *after* si B.

13. extensiones B.

23. dyametrum B.

39. pre-

And how can
a point pass
between two
others that
touch, without
having any
relation with
them?

These questions
I leave to be
answered by
theologians,
merely stating
that there is
nothing against
faith or truth
in my doctrine.
c) I consider it
an indubitable
fact that the
elements
remain in the
compound.
According to
Aristotle, a
compound
implies
alteration and
union, not
destruction and
production, as
generation does.

Three things
are required
for a
compound:
that its
elements should
be in a state of
fine division,
that their
qualities should
be to some
extent
conflicting with
each other,
and that there
should be a
certain
quantitative
proportion
between them.

videtur mirabile quod unus punctus potest interseri inter quecunque duo puncta, nisi ex aggregato, posita una linea, una constitui, et per consequens linea manens recta continue posicionem, cum hoc quantumlibet licet crescere, secante utroque extremo eius fixo. Et sic de 5 supposicione aut corporeitate, ut superius tactum est.

Et tunc videntur parare demonstrationes geometricæ de figuris. Scio tamen quod dicendum esset figuras dissolvi ex tali cremento quantitatis, novis sitibus generatis, licet sensus non sufficiat ita discernere. Distinccionem 10 illius materie relinquo theologis, hoc asserens, quod nulla pars fidei, nec verum aliquid, opponitur isti vie.

3^{um} argumentum claudicat, sicut et primum. Quantum ad existenciam elementorum in mixtis videtur michi indubie ipsam oportere concedere. Nam Aristoteles, 15 primo de generatione, ca^o de mixtione, movet dubium in terminis; et tenens affirmativam partem, dicit quod diffinitione | *mixtio est miscibilium alteratorum unio*; B 123^b ideo differt a generatione vel corruptione, ubi alterum corrumpitur et reliquum generatur. Differt eciam ab 20 augmentatione, ubi alimentum assimilatur aucto conservanti suam speciem vel naturam in actu. Differt ab alteratione, cum oportet utrumque mixtorum esse substantiam per se separabilem a reliquo, quod non potest competere quantitati. Unde tria requiruntur ad ydon- 25 eitatem miscibilium; primo quod sint bene minutim separabilia, ut sunt liquida et corpuscula terrea. Unde in lapidibus, metallis et omnibus mixtis perfecti novit subtilis experimentator quando componuntur ex minuciis terrestribus, aliis humidis interceptis. Secundo requiritur 30 contra contrarietas vel repugnancia mixtorum; quia aliter non resultarent forme superaddite potius quam in puris, nisi quadam armonica complexione disposicio ex contrariis resultaret. Et tercio oportet comixta esse proporcionabilia in multitudine, ut gutta 35 aque propter paucitatem suarum parcium non proprie

2-5. quecunque—extremo (sic!) B.
on B. 18. vino B.

10. sp^{us} pro sensus; and so

19. *Differt a generatione*. I have all along understood *generatio* by 'combination', and also *mixtio*. But the ancients often included under the latter name what we should call mechanical mixtures. Wine and water was a 'mixtio'; but so was also gold and quicksilver. They only spoke of generation, when there seemed clearly to be a new substance produced.

commiscetur cum dolio vini; et proporcionabiliter de aliis est dicendum.

In via itaque generacionis mixti conveniunt omnes proporcionabiliter sapientes illam materiam, 4 elementa
5 secundum partes miscibiles commisceri. Sed iuxta modum loquendi philosophi negant illa elementa manere in actu, dum forma superaddita est inducta; quod latum est a variis opinantibus, et terminative intellectum. Comentator autem ponit formas substantiales elemen-
10 tares intendi et remitti in sua essencia, cum fuerit media inter substantias et accidentia, et sic manere in esse remisso incompleto cum formis contrariis. Et illud vocat commentator esse in potencia. Patet ista posicio 3^o de celo 69.

15 Sed hoc videtur michi impossibile propter tria: primo, quia substantialis, vel essencia que est forma substantialis, non suscipit magis et minus pocius de substantiis elementaribus quam de mixtis; ut sicut nichil est reliquo magis homo, sic nec aliquid est
20 reliquo magis ignis. Nulla ergo igneitas est reliqua plus intensa. Secundo videtur innuere quod in mixtis sunt forme contrarie coextense, et per consequens tam materie quam qualitates; et tunc nullum continuum componitur ex non quantis. Patet deducio ex hoc quod
25 infinitum remissa foret forma tam substantialis quam accidentalis ad quemcunque punctum elementi; et per consequens in infinitum foret remissa substantia tali forma, et non totum quod est tota essencia materie. Ergo relinquetur quod pars eius qualificativa. Non enim
30 stat quod illud subiectum primo simul recipiat formas contrarias, sicut patet de ratione contrarietatis. Tunc
B 124^a enim simul | haberet denominationes contrarias, cum quolibet forma, ut huiusmodi, informat informancia appropriata ut, si est caliditas, tunc est aliquid illa
35 calidum. Et sic de qualibet forma substantiali vel accidentali, ut patet de quibuslibet earum, cum quolibet forma sit subiectum vel essentialiter vel accidentaliter formaliter se habere. Et tercio videtur quod 4 elementa
40 contraria, que communicant in eadem materia in numero, constituunt aliam substantiam: una quoque foret immediata materia forme superaddite, et foret formarum

All admit that the four elements are mingled together in the compound; and most of them, taking Aristotle literally, deny that they exist actually after combination, while Averrhoës says that they remain with less intensity of being.

The latter position seems impossible, 1. because no essence can have more or less intensity; nothing is more or less man, more or less fire. 2. Averrhoës seems to believe that in the compound, contrary forms compenetrates each other; which is contrary to our system of inextended points. In every point the form would be infinitely weak, and the resulting substance would be so too.

3. The elements would become the matter of the resulting form, and would thus be identified with one another.

5. niffibles B. 7. latum B. 8. t^{te} (?) r^{te} B. 16. fubalis (sic!) B.
18. elementariis B. 34. calliditas B. 35. callidum B. 40. una que B.

et materiarum processus in infinitum, et ydemptificacio elementorum, cum communicant in eadem materia vel essencia singulari. Sequitur enim, ut supra tangitur: *ista materia est de essencia huius ignis* (et sic de tribus reliquis elementis): *ergo singulum est singulum eorum-5 dem*. Nec evitabitur quin quelibet pars quantitativa unius elementi huius continuatur cum alia parte quantitativa alterius.

Modern philosophers think that the elements themselves do not remain actually, but say that their dispositions and qualities do.

But 1st, this is contrary to the definition of an element, which must be the intrinsic cause of the compound, and not merely a qualitative part of it.

The first sphere, as a cause non-existent in the compound, would be one of its elements; a stone would have matter and form alone, both simpler than any element.

The human body would be composed only of primal matter and an indivisible soul;

And thus the human body, so complicated in all its parts, would be simpler than an element.

Secunda est via posterius philosophancium qui ponunt nullum elementum actualiter esse in mixto. Sed quot-10 quot auctores et rationes ad hoc sonuerunt, omnes sentenciant quod dispositiones et qualitates, quales secundum speciem nate sunt consequi elementa, relinquuntur in mixtis: quod, cum sit verum, non arguit quod elementum aliquod sit in mixto actualiter. Contra 15 istam sentenciam videtur descripcionem termini militare. Nam elementum, ut huiusmodi, est causa intrinseca rei, nec pars qualitativa, ut exponit comentator, primo phisicorum et 3 de celo 6. 9. Aliter enim diceretur celum eque elementum sicut aliquod corporum 4 simplicium 20 sublunarium; nec congrue vocaretur lapis aut lignum corpus mixtum, cum habeant materiam primam et formam simpliciore quam aliquod elementum. Si enim non sit aliquod mixtum, est dare illa ex quibus misceretur. Corpus igitur hominis non misceretur, nisi 25 forte ex anima indivisibili et partibus materie prime; et sic materia prima foret caro, os, nervus, etc. ut alias diffuse prosecutus sum. Ymmo terra pura, vel aliquod elementum, quamtumlibet modice alteratum, foret corpus mixtum, et composicius quam aliqua pars 30 quantitativa hominis: quod et componeretur ex materia hominis et forma, et haberet qualitates contrarias, quales secundum speciem nate sunt consequi elementa. Et utrobique est generacio reciproca. Nulla ergo foret causa nisi ficta simplicitas talis corporis supra carnem. 35 Et cum caro, os, nervus, sunt eiusdem speciei specialissime, quia quodlibet illorum materia prima sine forma substanciali formaliter componente, sequitur quod totum corpus hominis, quod est composicius inter mixta, sit simplicius elemento.

40

13. *fu ffem* B. 14. *sit cum vm'* B. 21. *sublunari* B. 27. *v'mis*
= *vermis* B. 35. *non* B. 36. *u'uus* B.

2^o principaliter experientia phisica videtur repugnare.
 Nam tam arte quam natura cognoscitur ex partibus
 B 124^a mixtorum elementa | dispariter resultare, ut in dissolu-
 tionibus lapidum, calcancionibus metallorum, et breviter
 5 de vitro vel quocunque omogenio, quantumlibet fortiter
 commixto contingit partem subtilem aqueum vel aereum
 extrahi, semulento croceo derelicto; et longe facilius in
 vino, sanguine vel alio distillabili omogenee. Et idem
 docet natura patere nobis de carne vel de quocunque
 10 putrefactibili omogeneo, quod iuxta regulam Aristotelis
 humo putrescit; quod humidum unctuosum, relinquendo
 incineratum terreum, petit partes extremos quousque
 maior pars aerei vel ignei expiret, propter vim movendi
 et convenienciam ad locum debitum ex natura, sicut
 15 in sensibus innominatis; ut quercu putrida et similibus
 est videre. Talia enim, scilicet per subtile aereum et
 igneum ad circumferenciam exsudatum splendent in
 noctibus, cum naturale sit ex talibus luminum fieri,
 quod se ostendit in absencia splendidi forcioris: ut in
 20 oculis catticis, squamis piscium, quibusdam vermibus,
 et in omnibus conformiter proporcionatis in partibus
 superficialibus in tenebris est videre. Cum enim ex
 contingencia equali nunquam fit accio, patet quod ter-
 reum derelictum et igneum exalatum etc. in mixto fuerit
 25 disparium naturarum, cum oportet esse per se motum
 habere intrinsecus motorem in actu, preter formam
 accidentalem. Et idem patet ex elaboracionibus olei de
 minutis seminibus et de lapidibus silicinis. Et idem
 patet de fructibus, floribus, et quotlibet similibus que
 30 sunt in partibus superficialibus et intrinsecis: multum
 dispariter sapiunt, odorant, et specialiter colorantur.

Sed quo ad isto conceditur quod in talibus mixtis
 est dare partes quantificativas dispare, sed omnes eius-
 dem nature quo ad formam superadditam, licet in

2nd; it is
 against
 experience.
 We get the
 elements out of
 the compound;
 so they were in
 them,
 as is seen in
 chemical and
 metallurgical
 processes;
 we see fire
 proceeding
 from putrefying
 flesh or fish,

in the darkness;
 it comes out
 of the eyes
 of cats, &c.

No action can
 take place
 without an
 efficient cause;
 the appearance
 of this fire
 must, therefore,
 have a cause
 which is not a
 mere accident.
 Many other
 instances of
 like nature
 might be
 adduced.

3rd. But as they
 reply that there
 are quantitative
 parts that differ
 in the
 compound,
 one being

4. calcacōnibg B. 15. ff^{bus} B. 16. fp B. 20. cattis B.
 24. delictū B. 29. q, l, B.

1. This is the same argument as was lately used (though with all the superiority given by recent chemical discoveries) by those philosophers who maintain the existence of atoms against the revival of the 'Matter and Form' doctrine in the Neo-Scholastic system. The idea is the very same. "We get oxygen and hydrogen out of water, therefore they were there before." The reply is: "Actually, no; potentially, yes!" 7. *Semulento*. Probably derived from *semolla*, bran.

more similar
to one elements,
others to
others, but all
having the
same form and
compound
nature:

we argue thus:
Each element
existed
separately
before
combination,
and still
remains in its
essence;
therefore no
new forms can
possibly result
from it; or if
they do, they
will be of a
very different
nature from the
compound.
If the action of
one simple
body on
another can
bring a new
form into being,
it must be very
different from
either.

Additional
proof:
qualities that
were at first
in the elements
are now in the
compound;
as no accident
passes from
subject to
subject, they
are in the
elements still.
It is no use
saying that new
qualities are
produced and
the old ones
destroyed,
why should
they be
destroyed?

qualitatibus una quo ad unum elementum, et alia ad aliud, plus accedat; quia aliter non esset ratio quare carbo, lignum, et talia combustibilia secundum aliquam partem resolvuntur in cineres, et secundum aliam inflammantur. Contra illud 3^o argumentatur. Signo 5 totam multitudinem per C et totam multitudinem per D, que 4^{or} dicit adversarius corrumpi in adventu forme superaddite. Et argumentatur sic: quodlibet istorum 4^{or} fuit continue seorsum in loco per se sibi proprio, purum a commixtione cum contrario pereundum, et ad- 10 huc manet quo ad | essenciam, vel remissum paululum B 125^a in qualitatibus, vel ipsis servatis integris sicut prius. Ergo per nullum eorum superducitur forma superaddita; vel si inducuntur hec quatuor, habebunt formas super- 15 additas disparium naturarum. Consequencia videtur ex hoc quod ex pari evidencia, in quodlibet simplex conformiter altera tunc induceretur forma superaddita consimilis rationis; et per consequens, ex quocunque simplici contingit per accionem alterius simplicis sine commixtione quamlibet formam superadditam resultare; et, ut videtur 20 michi, in quodlibet istorum quatuor induceretur forma superaddita alterius rationis, cum sit subiectum alterius composicionis, sicut fuit inmediate ante induccionem; et proporcionaliter ad materiam datur forma.

Confirmatur tripliciter primo sic: impossibile est 25 qualitatem vel accidens quodcunque transmutari de subiecto in subiectum; sed qualitates prime, que iam sunt in mixtis, condam et fuerunt in simplicibus: ergo ad huc remanent in eisdem. Sic enim sonant quelibet dicta philosophorum quod nullum mixtum est calidum 30 aut frigidum, nisi participacione simplicis cui primo competit esse tale. Nec valet dicere quod tot et tante qualitates prime subito generantur, aliis subito corruptis in comitacione forme superaddite; quia non est dare contrarium a quo debeant corrumpi, cum possunt 35 manere in mixtis, nec efficiens, a quo tot et tante subito generentur. Nec superest ratio quare forent qualitates prime, quare possunt inesse in mixtis quibuslibet; quia sunt corpora simplicissima sine ordine

5—7. 3^o—4^{or} (sic!) B. 8. sunt *pro* super B. 10. p^{er}und, B.
23. g^{er}onis B. 30. callidum and very often after B. 39. quod B.

6. *Totam*. Evidently some parts of the sentence are wanting here.

prioritatis respectu elementorem se habencia, stante sententia huius vie. Confirmacio [2^a] est hec. Impossibile est qualitates contrarias coextendi; quod esset, stante illa sententia: igitur, etc. Et maior patet ex hoc quod

5 omnis qualitas est *subiectum esse quale*, cum non sit potens aliquid per se existere, sed unitate accidentis, cum aliis eiusdem rationis. Ex quo patet, si essent qualitates contrarie coextense, tunc vel nichil esset simul denominatum denominationibus contrariis, vel

10 [essent] materie coextense. Et patet minor, eo quod, si forme substantiales elementorum sint per totum mixtum, sequitur quod et qualitates; et tota contraria, multis modis contraria. Tercia confirmacio est ex impossibilitate reaccionis duorum elementorum simul et

15 semel secundum easdem partes; ut, posito quod A ignis et B aqua purissima commisceantur in dato mixto, oportet partem A reducere partem B sibi inmediate ad temperamentum in qualitatibus, et econtra; et per consequens, cum hoc non sit nisi per

20 reduccionem qualitatis contrarie, sequitur quod idem subiectum secundum idem sit simul et semel agens et paciens, in actu et potencia respectu eiusdem. Prius ergo et principalius educeret qualitatem contrariam a se ipso, quam induceret post debilitatem potencie per

B 125^b qualitates instantaneas qualitates suas in corpus | extrinsecum. Ideo, ut alias diffuse ostenderam, reaccio non est simul tempore et secundum idem possibilis; ad quam oporteret qualitates contrarias simul, subito, et tempore reciproce generari, propter talia multa que

30 naturales sciunt adducere. Credo 3^{am} sententiam in hac parte; scilicet, quod elementa sunt realiter in mixto secundum situs et formas proprias, ut dicit Avicenna, primo causarum, ca^o 3^o, et alibi multis locis.

Sed contra ista instatur tripliciter. Primo, videtur

35 quod proprie non sit mixtio, sed iuxtaposicio corporum; quod sic, habens oculos linceos videret quomodo quodlibet elementum foret seorsum positum; et sic per idem homines et omnia genera corporeum essent commixta in mundo, et nulla foret forma sub-

40 stancialis superaddita, cum nullum mixtum foret vere

Contrary qualities (i. e. those that remain of the elements when these are no more) cannot coexist in the same subject, and cannot exist

separately; now the non-remanence of the elements implies this. Two elements cannot at the same instant act and react on each other.

But in combination, the element A would have to neutralize a quality of the element B; which it could not do unless it lost as much of its own contrary quality; so it would be at the same time and in the same point of view, both active and passive.

Reaction must take place after action.

My position is that of

Avicenna: the elements exist really in the compound, in their own forms and places.

Arguments contra:

1. This would be no compound but an aggregate of atoms; we could, had we eyes good enough, discern every element apart; men, animals, all would be

2. ^a deest B. 3. ^o gritis B. 6. ^o accus B. 10. essent deest.
16. p'usfuma B; *ib.* fuma? B. 29. recipe B. 33. Ca^r, B. 35. ^o xp^o B.

mixed up, and there would be no superadded form to distinguish them.

It is false. The aggregate of atoms is the compound itself.

We cannot see how they are placed, but God does, and the mind knows in general that the essence of the compound depends upon their position. Men and all things are indeed mixed with one another; but they are distinguished by their proper substantial form.

II. The superadded form cannot exist at any point of the compound, (since the elemental forms are every-

where); it is therefore nowhere.

We reply that as substantial forms are more elevated above matter, they are less subject to material conditions.

Each form is indivisibly in the whole of its subject, but partially so.

aliquod unum. Ad illud negatur prima consequencia, cum iuxtaposicio corpusculorum, ceteris requisitis, constituunt vere mixtum, cum omnes vere loquentes de mixtione oportet concedere vel corpora parva, vel materias corporum, iuxta poni, et per formam superadditam 5 continuari. Licet autem nullus oculus corporalis sufficit cognoscere appropriatos situs corporum commixtorum; Deus autem distinctissime, et intellectus humanus confuse cognoscit posicionem in quolibet mixto perfectius huiusmodi situs dari. Et sic conceditur homines com- 10 misceri ad invicem cum aliis, et proportionaliter de ceteris partibus huius mundi, sed non ad finem quod forma substantialis resultet constituens mixtum substantiale disparis speciei; et solum tale mixtum ad propositum est naturale cuius quilibet pars quantitativa 15 in actu, que potest per se existere sub tali specie vel per se sentiri: quod philosophi secundum gradum minimum vocant minimum naturale. Nec obest materiam formatam suscipere super illam formam superadditam disparis rationis. 20

2^o videtur quod ad omnem punctum materie mixte non sit forma superaddita, et per consequens cum per totum sit eius privacio, sequitur quod nusquam sit talis forma; quia nec indivisibilis, nec extensa. Ad illud dictum est superius, quod forme substantiales, ut a 25 materia elevaciores, sic sunt a condicionibus materie remociores; ut forma corporeitatis vel forma elementaris secundum aliquos est sitaliter secundum partes punctuales materie; et quilibet forma materialis superaddita determinat sibi certam multitudinem elementorum 30 constituencium minimum naturale; et sic gradatim ascendendo quousque deveniatur ad animam hominis, que est finis formarum de quibus considerat philosophus naturalis, ut patet 2^o phisicorum. Nec extenditur minima forma per subiectum suum primum, sed est ad 35 quemlibet eius punctum indivisibiliter quo ad molem; et quotlibet tales indivisibiles constituunt formam superadditam mole magnam: Et sequitur quod tota sit ad omnem | punctum sui subiecti primi secundum aliquam B 126^a sui partem. Et patet quod falsum assumitur, cum que- 40 libet forma substantialis cuius partes quantitative distant sitaliter extenditur modo suo. Nec oportet quamlibet

partem quantitativam subiecti habere appropriate partem
quantificativam forme, sicut forme anulorum extendun-
tur. Si partes sue quantitative sint animalia anulosa (et
sic de bestiis; si multe quantitative unam constituent)
5 forma totalis extenditur modo suo. Ymmo, si duo ho-
mines unum hominem quantitative constituunt, forma
totalis extenditur sine alia sui parte divisibili vel ex-
tensa.

Nec sequitur ex istis quod mixtum solum ligatorie
10 vel aggregative sit unum, ut cumulus lapidum, domus,
vel populus; quia ex commixtione propria et perfecta
resultat quedam forma substantialis et perfecta speci-
fica; non sic autem de aliis artificialiter aggregatis.
In hoc tamen conveniunt quod, sicut impossibile est
15 mixtum perfecte poni in specie sine forma substantiali
a qua habeat quantitatem, sic impossibile est populum,
domum, vel aggregatum quodlibet esse unum, nisi sit
forma artificialis vel alia accidentalis in aggregato
huiusmodi, a qua accipiat esse unum, ut populus supra
20 multitudinem dicit consensum hominum, ut obediant
uni legi. Et domus dicit figuram aggregatam ex posi-
tionibus suarum partium, ut defendat hominem ab
intemporaneis nocementis. Et sic de ceteris, cum omnis
unitas sit a forma. Et sicut forma substantialis mixti
25 est per totum subiectum, licet non extenditur nisi per
subiectum homogeneum suo toti; sic forma aggregata
taliter accidentalis aggregati est per totum suum subiec-
tum. Et de possibili non habet aliquam partem com-
similis rationis; sed sicut forma mixti est causaliter in
30 elemento per quod non extenditur, sic et forma aggre-
gati est in quolibet partibus eiusdem, que habent
appropriatas habitudines ex quibus resultat forma totalis
longe disparis speciei. Nec est vis, sive vocentur eius
partes, sive forme presupposite ad totalem formam.
35 Unde similiter intelligendo talia aggregata, concedi
debet quod proportionaliter dissolvuntur ut mixta, ex
dissolutione vel deficiencia sue forme.

Sometimes each quantifying part of the form answers to a quantified part of the subject, as in the Annulosa, or where many animals are united together in one whole.

There is a great difference between a mere aggregate and a compound. The mixture is so perfect that it brings into being a new substantial form.

They resemble each other in that in both cases there is a form — here natural, there artificial.

A nation implies the form of authority; a house, the proper disposition of parts in order to give shelter, &c. And in both cases, the form is everywhere in the subject, but without extension.

9. legacōr B. 10. anulj B. 11. que quia B. 16. Et pro sic B.
23. ἵτα^{eis} B.

2. *Anulorum*. It was formerly a great difficulty for philosophers to explain how the one indivisible principle of sensation can be multiplied by scission, as it is in certain of the Annulosa.

III. According to this, there would be only one being in the world; since everything would form one whole with the surrounding medium. It is quite true that all things form one whole by continuity; otherwise the world would not be one corporal substance. Those parts of a compound which are of the same kind as the surrounding medium, form a continuity with that medium, as for instance the air expired from the lungs. Continuity requires a medium, and is not a thing that can exist by itself. The terrestrial parts of a compound are not continuous, because separated by particles of earth and of water; which, when evaporated, only dust remains. Sometimes, to avoid a vacuum, one heavy body when moved draws another after it. Continuity, says Aristotle, consists in the

3^o videtur quod omne mixtum sit continuum cum medio continuante; et per consequens nullum corpus mundi est ens in actu, sed solum potencia; et sic nulla foret continuacio, cum quantumlibet disparia corpora in quantum immediate sunt posita, sunt adunata. Ad illud dicitur, concedendo quod omnis pars mundi corporea continuatur cum alia, cum alias non esset mundus una substancia corporea, sumens ut quoddam totum omnem naturam corpoream parcialem; quod est falsum, cum mundus sit maxima creatura | possibilis, mole magna, circulata, constans ex omni materia possibili, subiecta situi et tempori, et multis aliis accidentibus, gracia cuius perficiende sunt omnes parciales substancie, ut noverunt philosophi, et supponitur in presenti. Mixtum ergo, in quocunque elemento sit positum, trahet quotlibet partes eiusdem speciei ad sui circumferenciam, et per consequens immediatas medio continuati; secundum tales continuatur cum medio; ut aer, respiratus a pulmone et corde, continuatur cum spiritibus aeris; et per consequens, cum toto cuius illi spiritus sunt partes precipue. Et indubie aer respiratus continuatur cum medio continuante, quia in aqua, igne vel aere, non potest expectare successivam accionem per quam ipsa per tempus immediate posita in fine primo continuantur secundum aliud; ut aliqui, volentes continuacionem esse rem absolutam que per se possit existere, false fingunt. Et sic indubie esset de terra, nisi partes aque vel aeris intercise facerent partes distare ab invicem; et hinc mixtum terreum, post exalacionem vel evaporacionem elementorum continuanciam, decidit in pulverem; et partes pulveris de possibili immediate constituunt unum corpus; licet continuacio non sufficit ut una pars ad quemcunque recessum alique insensibiliter insequatur. Contingit eciam in casu, pro supplecione pleni, virtute continuacionis, quantumlibet grave sequi aliud inmedium amotum, etsi fuerit disparis speciei; quod nunquam contingeret, nisi esset quedam continuacio sic motorum. Unde, ex influencia veritatis, motus fuit Aristoteles 5^o phisicorum (forsitan ignoranter) ad ponendum con-

15. tñs B. 17. otiti B. 26. figunt B. 31. pluri's B. 33. c'teffum B.
34. cum pro contingit B.

34. *Pleni*. Probably an allusion to the rising of water in a pump.

tinua descriptive talia: *quorum ultima sunt unum*; ut
 duo puncta immediate posita nunquam huiusmodi con-
 stituunt quoddam unum, quod est terminus communis
 utrique, communicantium parcialiter in eodem. Unde
 5 conceditur quod quolibet quantitativa corporeitas est
 in potencia, non tamen distinguendo potenciam contra
 actum. Et sic omnia corpora que non sunt continuata
 cum corporibus eiusdem speciei constituunt numerum
 actualem. Et continuacio talium cum corporibus disparis
 10 speciei, adnascencia vel contiguacio nominatur. Ex
 quo patet quod hec duo, continuacio et contiguacio,
 non sunt species distincte ex opposito, sed potius con-
 tinuacio est genus utriusque. Contigua enim sunt que-
 cunque se tangencia disparis speciei, quorum ultima
 15 sunt simul. Et si sunt corpora disparis speciei, confixa per
 humidum continuans ad 3^m integrandum, tunc sunt ad
 hoc nata, ut os, cartilago, nervus et cetera, et omnia
 genera concurrencia ad integracionem corporis animalis.
 B 127^a Ideo vere dicit | commentator quod in methaphysicis
 20 non differt contiguacio a continuacione, cum eo ipso
 quod ultima linearum superficierum corporum, sunt
 simul unum continuum; et econtra.

limits of two
 things being
 identical; but
 two points that
 merely touch
 are not
 identical.
 We may grant
 that all bodies
 are *potential*
 (without
 denying their
actuality)
 because they
 are more or
 less separated
 from others
 of the same
 kind; the fact
 of their
 touching bodies
 of a different
 kind is called
contiguity,
 which is a sort
 of continuity,
 and does not
 differ from it
 in a
 metaphysical
 sense.

Uterius notandum est iuvamen elementorum in mixtis,
 ad constitutionem et perfeccionem sui compositi. Oportet
 25 autem in omni mixto perfecto terram quo ad multi-
 tudinem dominari, propter mixti constanciam. Nec
 aliter esset iuvatum efficienter sensus tactus. Unde,
 secundum analogiam, ad suum sensibile fundatur sensus
 tactus plus necessarius aliis in nervo retili terreo,
 30 ceteris sensibilibus plus extense. Oportet secundo inesse
 naturam aqueam ad multitudinem terrenam, forcius
 colliniendam terream, et ad stabiliendum in homine
 sensum gustus, quem oportet fundare in humore aqueo,
 nedum quoad linguam ad partes pororum extensius adia-
 35 centes. Sed e converso quo ad gustale quod oportet
 omne humidum aqueum, si gustum debeant propor-
 tionaliter mutare, et genera talium obiectorum sensus
 distingwere, ut sensum per habens sensus huiusmodi,
 nedum quo ad noticiam, sed eciam ad *esse*. Et omnia
 40 talia sunt ordinata ad hominem ut ad finem. Ideo non
 impertinenter reducitur causa mixtionis elementorum in

The elements
 concur actively
 to give
 perfection to
 their
 compounds.
 Earth gives
 stability and
 palpability, and
 must
 predominate in
 every perfect
 compound; it
 is the basis of
 touch.

Water joins the
 particles of
 earth, and is
 necessary to the
 sense of taste
 in man.

All things are
 made for man,
 and the reason
 of all
 compounds
 which are

1. motus quorum B. 6. ipointa B; ib. ponam B. 18. genia B.
 23. Iuva^{ma} B. 29. aliter B; ib. r'tili B. 38. sp^{vus} B.

inferior to
man is to be
found in him.

Air must be
present;
otherwise the
compound
would not be
sensible to the
undulations
which cause
sound in the
air,

and move the
cavity of the
internal ear
where
the auditive
faculty is
situated.

Fire is
necessary to
the animal
spirits, that
they may
perceive light
and colours.
There is more
fire in the eye
than in any
other part of
the body.

Nothing
leaves the eye
to strike the
object, nor can
the eye see
without
something
visible, in
regard to
which it is
passive, though
active in other
ways.

Natural
philosophers
tell us
that earth
predominates
in ores and
stones; water
in metals;
inflammable air

mixtis remotis sub homine ad hominem, gracia cuius
taliter commiscetur. Oportet tercio aerem commisceri,
quia aliter non esset mixtum tale sonorum, dilatans se
post percussionem, nunc secundum dyametrum longi-
tudinale, et nunc secundum latitudinem, ad tractum 5
spiritus aerei complantati corpora, causando secundum
numerum tremulosum ex dilatacione et constrictione
secundum dyametros transversatiles, sonum in aere
proporcionaliter continente, qui eciam moveret con-
naturalem et complantatum aerum in miringa. In tali 10
namque mixto aere complantato, et non in aere alieno
contento in spongiosioribus, subiectatur vis anime au-
ditiva. Ignis autem clarificat spiritus alienos, et facit
proporciones, ad colores iuvans ut sue speciei cum
irradicacione luminis extranei per medium dyafanum 15
sensibiliter differenciuntur. Unde in spiritibus animalibus
qui subiectant virtutem visivam, ignis plurimum domi-
natur in proporcione admixta alia; ut ex claritate crista-
laydis, cum tunicis sufficienter illuminatis in suis super-
ficiebus, et species libere inserantur, et lumen oculi 20
cum virtute visiva commisceatur cum specie visibilis
in medio e converso, usque ad solidum terminans
visionem. Non autem egreditur corpus ab oculo ad
terminum; nec sufficit hec multitudo ocularis sine
coexistencia speciei visibilis obiecti, a quo organum, 25
recipiens speciem, specialiter paciatur. Unde passionem
visus declarat Aristoteles | in De sensu et sensato et 2^o B 127^b
De anima. Accionem vero sensus ponit, 19 De animalibus
et 3^o Metaphysicorum.

Alie autem sunt quotlibet commoditates in existencia 30
elementorum in mixtis; quorum tractatus ulterior per-
tinet naturali, qui ponit inter mixta perfecta terrea
habundancius dominata; ut in minera, vel lapide; 2^o
aquam, quo ad opus liquacionis dominari generaliter
in metallis; 3^o unctuosum aerem, qui est causa in- 35
flammabilitatis, ponit in vegetali quo ad illud effectum

7. cōsac'one B. 14. sue ffēu B. 24. mlti^o B. 30. existencie B.
33. lapide vel B. 34. loqconis B.

35. *Unctuosum aerem*. I have rendered this in the note by inflammable air, which was one of the first names given to hydrogen; an element that is really abundant in plants, as is well known.

dominari; quarto aerem puriorem in sensibus, specialiter quo ad spiritus aminales; et quinto ignem habundantius in homine, propter maiorem copiam istorum spirituum, et alias operationes ad quas natura ornat
 5 intentum. Et sic et species et genera mixtorum, quaecunque genera corporum simplicium in maiori mundo proportionaliter coaptantur. Nec tollit tale dominium aliorum elementorum super terram ampliorem terre multitudinem, vel dominium terre quo ad aliqua super
 10 illa; sed satis est quod unum elementum quo ad aliquid super reliquum dominetur, et quod mixta totaliter perfectioribus formis substantia, habet plus proportionaliter de superioribus elementis. Conferat ergo protervus textum Aristotelis alio, mediate in fine, cum dictis eius,
 15 primo De generatione, 4^o Methaphysicorum, et alibi ad significacionem debitam, et videbit quod nullum dictum philosophicum sit obvium huic vie. Causa precipua quare illa via abhorretur a pluribus est quod non per sensum percipiunt adcomposicionem continui ex non
 20 quantis.

Tercio et ultimo restat videre de velocitate motuum quo ad signum penes quid attendi debeant. Et primo de motu locali. In qua materia recordati sunt moderni quod non attenditur penes magnitudinem situs
 25 corporei acquisiti in corporacione, ad tempus; quia stat aliquid subito acquirere vel deperdere talem situm per adnascenciam vel discontinuacionem. Stat etiam columnam rotundam, 2 pedum in longitudine, et 8 pedum in latitudine, sicut hasta est, descendendo uniformiter
 30 in hora, describere in hora situm secundum longitudinem duplum ad hastam; et aliam simillimam in figura volvi latitudinaliter precise eque velociter, describendo situatiter plus quam octogintopliciter ad priorem, sicut patet calculanti: ubi certum est quod
 35 quolibet punctus unius precise eque velociter movetur, sicut aliquis punctus alterius. Non ergo esset possibile aliquod corpus moveri uniformiter quo ad subiectum, supposita illa tria repugnancia.

in vegetables, to render them combustible; a purer air constitutes the animal spirits and fire is abundant in man.

Each element predominates somewhere for some special purpose. If Aristotle's words on the subject be properly examined, he will be found in agreement with us.

Question III. What is the measure of the velocity of any motion?

It is certainly not the space covered by the mobile in a given time. Two cylinders of the same size are moved with the same rapidity, one parallel to its diameter, the other parallel to its length: if the length be to the diameter as 2 to 8, the space covered will be eighty times greater.

2. Exgmo B. 5. ga B. 11. totalia B. 21. Io; B. 33. octogintoplr B. 38. ta' B.

33. *Octogintopliciter*. As I understand the case, the difference would not be so great; only as 16 to 64. But I cannot help thinking that the marginal note renders Wyclif's meaning.

It is generally
and rightly
believed that in
every mobile
there is a
point that
moves
swiftest of all,
and measures
its motion.
This implies
the existence of
points, having
distinct degrees
of movement.

The degree of
intensity of
movement is
only complete
at the surface
of the body,
as colour is
also only at the
surface.

There is also a
point of
minimum
movement in
every being
that moves
itself; as in
sensitive
movement one
faculty moves
another and is
moved by
another.

Every part
helps another
as one part of
the world aids
the movement
of another, and
thus of the
whole world.

Ideo dicitur communiter et bene quod in omni corpore mota localiter est dare punctale velocissime motum, quod est mensura velocitatis tocus motus, | cum B 128^a
omne motum tam velociter movetur sicut aliqua pars sui; et sic patet quod sequitur ex illo punctum, lineam, et 5 superficiem esse et motus sibi proprios, et per idem situs et alia accidencia. Ut, posito quod latitudo alteracionis et eciam motus localis uniformiter, et difformiter a non gradu usque ad gradum ut 4^{or}, extendetur per .B corpus: est dare gradum intensissimum motus alteracionis, sicut et 10 motus localis, qui gradus solum est ad extremam superficiem totaliter; sicut et qualitas sic intensa sicut est color vel lumen solum per superficiem corporis spacii, quod luminosum transpicit solum secundum talem superficiem totaliter et primo. Aliter enim ageret color 15 intrinsecum quantumcunque parvus per medium opacum, cum sit dare primum agens, sicut et nisum [et] difficultatem quam produxit ad maximum. In omni ergo corpore moto, pars naturalis primo mota est punctale.

Et preter hoc est dare minimum naturale in quomodocunque per se moto; quod minimum non potest moveri secundum partem reliquam respectu opposite quiescentis; ut in motu animalis obiectum movet sensus extrinsecos et intrinsecos; at illi movent appetitum 25 sensitivum; et ille movet virtutem secundum locum motivam, et illa calorem vel humiditatem quod in musculis et lacertis; et forte in corde est minimus calor primo motus, quamvis quelibet pars animalis iuvet reliquam quamlibet ad agendum, sicut quelibet pars 30 mundi iuvat quamlibet aliam. Et per consequens homo variatur qualibet parte mundi. Sicut enim cumulus silve vel arene ostendit se, quantumlibet distanter, per communicacionem parcium, sic tota terra (et per idem totus mundus) ostendit se per communicacionem par- 35 cium. Nam si quelibet pars iuvat reliquam ad integrandum suum totum, quod et equivalent finaliter per quamlibet partem materialiter communicantem, sequitur quod quelibet pars coadunat reliquam et suum totum ad omnem posterius esse causatum.

8. difformis B. 17. et after nisum deest B. 22. quod non B.
27. huō^o (?) B. 24. quiescente B. 28. mistulis B. 37. equivocant B.

Parum tamen locutum est de illo colore vel colorato, quod primo appropriate agit speciem et terminat distantiam visionum. Non enim oportet, si unum iuvans agit, quod coagit cum eodem. Nec oportet, si hoc sentitur vel noscitur a noscente, quod distincte sentitur vel noscitur ab eodem. Sed hoc forte evenit ex dicta communicacione parcium universi, quod quolibet eius partem apprehendendo, apprehenditur ipsum totum intencione confusa; et ipso confuse apprehenso, apprehenditur eius quolibet pars; ymmo primum principium, quod omnia appetunt, ad minimum confuse.

Remark respecting colours, how they act to aid vision.

Sed reliquendo hoc, ut hic inpertinens, alibi pertractandum, prosequendum est de mensura velocitatis motuum. Sunt ergo duo modi dicendi in materia de velocitate motus localis. Nam aliqui dicunt quod attenditur penes lineam descriptam a puncto velocitate motus. Contra quod 4^{er} argumentatur. Primo ex hoc quod omnia puncta mota in ultimo celo, sicut et omnia puncta intrinseca cuiuscunque mobilis, nullas lineas describunt: ergo non generaliter | penes hoc attenditur motus localis velocitas. Et si dicitur quod equivaleat, modo ac si omnes isti puncti describerent lineas istis motibus siderum, assencio quod, si sic describerent ista puncta istis motibus lineas proportionaliter ad velocitates istorum motuum, tunc in infinitum velocius moverentur quam modo; et sic in infinitum tardius, cum antecedens implicat substantias duas corporeas coextendi, unam continue quiescentem localiter, et aliam corpus quiescens continue penetrantem: quod cum sit impossibile, patet quod illud consequens verum nullius est efficacie, sed oneris respondentis.

Two opinions regarding velocity of movement. Some say that it is measured by the line described by the point of greatest velocity. Four arguments *contra*.

1. The points of the first mobile and the points inside every moving body describe no lines at all. If it is said that it comes to the same as if each of the points described a line, that implies compenetration; which is absurd.

Similiter, planeta movetur multis motibus, quorum aliquis est velocior, aliquis tardior; et tamen, quancunque lineam vel situm longum describit aliquis eius punctus uno illorum motuum, describit et quotlibet. Non enim est dare situm quem describit punctus lineae, motu orbis superioris, vel motu sui, proprii orbis, vel epicicli, quin eundem describit quolibet istorum motuum; sicut patet attendendo diligenter ad figuram situs quem describit planeta.

2. A planet has many movements, some swifter, some slower, and each of its points describes them all at the same time; it is impossible to find any one line described by a point in this case.

Item, in motibus difformibus quo ad tempus, non tenet illa regula. Ergo est diminuta. Antecedens patet

3. Neither does the rule hold for motions

18. sunt B. 22. quod modo B. 34. aliquid B. 35. punctos B.
39. dir B. 42. dimittit B.

that are varied
in time, for a
given length may
be traced in a
given time by
mobiles of
infinitely
varying
velocities.

ex hoc quod contingit infinitos esse motus horales,
quorum quilibet describet lineam a pedalis adequate;
et tamen primum esse uniformem ut duo, secundum
eque intensum gradum ut 4, et tercium gradu ut 8; et sic
in infinitum. Ut, posito quod in infinitum intendat aliquod 5
istorum suum motum super aliquam partem sue linee,
tardando diucius super reliquam; sicut loquentes com-
muniter in ista materia admittunt, et quibus solet queri
quam velociter moveretur corpus motum primo uni-
formiter gradu ut 4 pro medio instanti inter illos duos 10
motus, et quam velociter descendit grave in confinio
inter aquam et aerem.

4. We can give
a case of a
body in which
the swiftest
point does
not exist.

Similiter, aliquid contingit movere per tempus con-
tinue, in quo non est dare punctum eius velocissime
motum. Ergo regula non est generalis, cum tamen, 15
dicendo sic regula generalis, eo quod motus difformes
quo ad tempus sunt univoce veloces cum motibus uni-
formibus quo ad tempus, sicut sunt univoce motus cum
illis. Ergo dicenda est illis ratio eadem. Assumptum
huius argumenti foret evidens illi qui poneret in cor- 20
pore rarefacto per totum, et cum hoc continue circum-
ducto pro quolibet instanti, aquiri novam quantitatem
per totum; sed quia illud est impossibile, ideo adducitur
argumentum de corpore circumducto, in quo continue
corrumpantur puncta extrema: ut posito quod Sor, 25
continue expansis manibus et brachiis, circumducatur
et quod continue auferatur de extremo medii digiti
corelative moti, tunc non est dare punctum velocissime
motum in Sorte: et per consequens vertigo Sortis non
mensuratur penes illud. 30

If a man is
whirled round
with out-
stretched arms,
and a point
continually
cut off from
those
extremities, it
is impossible
that his
movement
should be thus
measured.
The movement
would not be
measured by
the line just
outside the
body,
for (1) the
adversary who
replies thus
does not admit
a definite
number of
points.

(2) No point
can move faster
than another
to an infinitely
small extent.

Sed hic dicit taliter | opinans quod talis motus velo- B 129"
citas attenditur penes lineam quam describeret punctus,
qui indivisibiliter velocius movetur quam aliquis istorum
omnium punctorum motorum in mobili. Sed de isto
dicto amiror propter multa: primo, quia iuxta sic opi- 35
nantem non est dare omnia puncta in illo moto mobili,
sicut nec est dare infinita, ut dicit. 2^o, quia claudit
contradictionem aliquem punctum indivisibiliter velocius
moveri quam movetur aliquis istorum, cum non sit
possibile penes ipsum unum excedere aliud per indi- 40
visibile: quod tamen oporteat, dato tali motu puncti

2. que (or quo) libet describe B; *ib.* bñe pro lineam B
13. aliud B. 15. 16. tn ddo B. 19. ddo B. 28. corlo^{me} B.
33. indunt^r B. 35. p'mo propter B; *ib.* multo p'o B. 38. indim B.

indivisibiliter velocius moti. 3^o, quia tale circumductum non movetur velocius quam aliquis eius punctus; quia tunc moveretur velociori gradu motus; et per consequens, cum gradus iste sit dandus, esset dare illud quod
 5 primo movetur illo gradu. Sicut ergo non est dare precise quam velociter precipue movetur aliquis punctus sic moti, ita nec est dare quantum velocior precipue movetur totum mobile. Et quarto patet, quia ymaginato quod Sor circumductus derelinquat post se, per totum
 10 in quo fuerit aliqua pars eius [caliditatis, ipsam] caliditatem vel aliud accidens quodcunque, et non extra illum situm, patet quod completa circumduccione est dare totale accidens derelictum, et per consequens est dare eius circumferencia, cum solum finite situaliter
 15 extenditur. Quero igitur utrum circumferencia talis accidentis sit maior quam triangulus descriptus a B puncto (indivisibiliter velocius moto continue) quam aliquis punctus in instanti, vel minor, vel equalis? Non dubium quod sequitur, pro quolibet instanti intrinseco
 20 motus, aliquem punctum Sortis velocius moveri quam B uniformiter motum. Sed miror quare non erit motus B tante velocior, quam circulus descriptus ab eo erit maior? Et cum uniformiter movebitur, sicut et B, ut suppono, sequitur cum dandis quod in qualibet
 25 parte talis temporis, B excederet Sortem per indivisibile. Ergo non solum indivisibiliter movetur B velocius S. Et hic videtur quod, circumducta a B linea A, extremo continue quiescente, causaret per B motum circularem, sicut describeret situm circularem; et amoto eius puncto
 30 extremali sine pluri, in 2^a eius circumduccione describeret circumulum immediatum priori: et sic sine fine. Et sic componeretur circulus ex circumferenciis immediatis. Nec est dubium quin est dare totale situm per quem Sor fuit pro tempore sue circumduccionis.
 B 129^b Et sic de A et B linea, quocunque parte mundi, | eo quod est dare maximum situm in mundo, ad cuius

(3) It is impossible that a body could move faster than any of its own points; which is implied, if the measure of its velocity is a line outside it.

10. caliditatis ipsam *deest* B. 30 *plui* B.

8. *Et quarto.* Of the whole of this paragraph and the following ones, I have been able to understand nothing relevant to the question discussed. Readers should bear in mind that the MS. is unique, frightfully illegible, especially in this part, without any corrections from here to the end, and bearing upon a subject which is itself particularly hard to understand.

nullum punctum intrinsecum tunc fuit Sortes, et resi-
 duum situs mundi, et maximus situs ad cuius quemlibet
 punctum intrinsecum tunc fuit Sortes. Et idem sequitur
 de quolibet parcialiter situato, eo quod totalis situs
 mundi integratur ex duobus talibus sitibus. Et 5
 patet quod motus Sortis erit continue extensus per
 dandum situm continuum; et sic usque ad illius situs
 circumferenciam. Si ergo quilibet punctus extremalis
 movebitur quando erit extremalis, et solum instans ante
 erit extremalis, tunc motus circumferencialis erit com- 10
 positus ex motibus instantaneis. Et si quilibet punctus
 talis non movebitur quando erit extremalis, tunc con-
 tinue ad circumferenciam illius situs erit non gradus
 motus, ex hoc quod continue ad extremum Sor, quod 15
 velocissime moveretur, erit non gradus motus: quod
 esset mirabile, quia tunc non esset dare quam velociter
 mobile aliquod moveretur pro quolibet instanti intrin-
 seco; et tamen, dato motu, oportet dare magnitudinem
 eius mobilis, sicut et diuturnitatem; et per consequens
 eius extensionem usque ad eundem terminum inclusive, 20
 ad quem inclusive terminatur eius primum subiectum.
 Et sic videtur quod tam velociter diminuitur motus
 quo ad molem, sicut et eius subiectum, cum continue
 erit precise par suo subiecto; et eadem diminutione
 divisione minuetur utrumque; sed subiectum inclusive 25
 a gradu magnitudinis usque ad gradum magnitudinis
 quem habebit tunc, et motus coextensus terminabitur
 inclusive ad eosdem; quia aliter subiectum deperderet
 maiorem magnitudinem, et aquireret maiorem parvitatem
 in equali tempore quam faceret suus motus. Et tunc 30
 non esset dare quam velocior diminueretur ille motus
 vel quantum diminuetur, vel quantum durabit; sicut
 nec est dare quam magnus vel parvus erit ultimate.
 Et per idem non esset dare quantum extendetur pro
 aliquo instanti; cum tamen totus situs mundi integratur 35
 ex situ per quem non est iste motus, sequens est
 residuum situs esse maximum situm per quem est iste
 motus. Et idem argumentatur de futuro.

Et per idem sequitur, posito quod A, lapis albedine
 saturandus solum secundum contactum, moveatur usque 40
 ad finem illius hore extrinsece, in quo anichiletur,

10. tunc erit B. 17. quod *pro* aliquod B. 22. divisibiliter B.
 25. dumet^r B. 26-27. a—quem (sic!) B. 40—41. alb^o fa⁹⁹ B.

servatis eius accidentibus (quod est impossibile, toto colore servato), est dare situm per quem est anichilacio, et per consequens, ubi A erit ultimate sicut est
 B 130^a dare usque ad quem situm | pretenditur color et defertur
 5 accidens per A lapidem. In fine ergo erit verum quod A sit B, et per consequens quod fuit ita quod est hic. Si ergo A erit ad B, punctum extrinsecum, tunc tanget ipsum, et erit ita quod est ad illum. Et habet colorem, si de longinqua extensione temporis habet concedere,
 10 scilicet, si aliquid aliquiditer se habuit vel habebit, tunc si se habet. Non enim est color in isto zophismate: *ad istum terminum A est et A non est ad istum terminum. Infinitum propinquum est A hinc termino et A non est infinitum propinquum hinc termino*; quia est
 15 dare totum situm, per quem adequate nunquam est A, quem situm motum est esse immediatum termino dato. Si usque ad istum terminum A movebitur, et pro illo instanti pro quo A fuerit in termino inclusivo illius situs, erit A ad illum terminum et super ultimam
 20 partem proporcionabilem illius situs.

Nec vereor dare ultimam partem proporcionabilem alicuius continui; quia a signato A, corpore columnari possibili, uniformis grossicie ut virgulto correspondentali, dividendo illud in suas partes proporcionabiles geo-
 25 metricas minores, versus B extrinsecum. Ut capio duas lineas girativas, incipientes in extremis dyametri C relique basis, et circumgirent quamlibet istarum parcium proporcionabilium versus B extremum continue propius sibi ipsis, usque ad B basim, et signo corticem inter-
 30 ceptam inter illas duas lineas per D: tunc patet quod deus potest corrumpere omne corpus in ista columnna preter D vel partem eius. Stat enim quod D sit magnum corpus ut 4^a vel 5^a totius A. Ideo nemo qui ponit deum posse tot mirabilia facere negabit ipsum posse
 35 separare D et ponere per se; quo facto, etiam pono quod E veniat ex adverso, condensans vel flectens partes graciliores D versus extremum suum lacius. Tunc patet quod est dare instans in quo C tangit D, in quo oportet quod tanget extremum gracile illius D et per
 40 consequens est dare communiter quantumcunque longam vel brevem partem determinatam ad illud extremum.

6. h' B. 8. colorem B. 9. longit^{us} de B. 23. v'go B; *ib.* cor^{um} B.
 35. c *pro* etiam B.

Data ergo una parte eque longam, sicut gira circum-
dans grossiciem colume, patet quod illa cinxit ultimam
partem proporcionalem. Nec oportet nos sollicitari de
acucie anguli talis corporis, nec de situ in vasi ad
quem terminatur; quia non est nostrum distincte cog-
noscere. Unde si D, pyramis ferrea, tangeret primo
secundum communem punctalem F planum per G postea,
operatam constantem, videtur quod D abstractum,
stante posicione parcium G, haberet in latere applicato
plano unum foramen punctale, quamvis non sufficeremus
distingwere tale foramen H; sicut nec radium huius
transeuntis per illud foramen; nec punctum sibi ex-
tremum talis radii incideret. | Tales multas evidencias B 130^b
feci alias pro et contra. Sed tamen communicando cum
theologis, querendum est si deus potest de potencia
absoluta facere unum situatum non quantum, post illo
habito; si potest anichilare multa talia simul et con-
vertere, faciendo unum quo ad apparenciam continue
magnum; et habito quod sic, queratur ut ratio, ex-
perimentum, vel auctoritas [doceat] quod non omne
continuum constat ex talibus de facto. Nam omnia
argumenta de ratione vel experientia ducenda in medium
eque moverent ad improbandum talia posse esse, sicut
ad improbandum talia esse.

Leaving these
philosophical
difficulties, and
passing to
theology, let us
ask if God can
make a thing
occupy space
without
quantity, or
annihilate and
re-create it so
as to give the
appearance of
a thing having
continuous
magnitude;
if so, how do
we know that
it is not so
now?
Yet we do.
Three things
should be
noted: first, the
distinction
already set
down, as to
uniform
movements, &c.
2nd, that

Supposito ergo quod sit talis compositio, redeundum
est ad regulandum velocitates motuum. Redeundo ad
punctum propositum de mensura velocitatis motuum
quo ad signum, necesse est tria supponere; primo
distinccionem de uniformitate; et sic de aliis divisionibus
motuum supradictorum. 2^o, supponatur quod solum
motus temporalis qui primo tempore mensuratur, sit
velox vel tardus; velocitas enim motus respicit temporis

8. opaca B.

20. doceat *deest* B.

25. Suppono B; *ib.* reddendum (!) B.

25. *Compositio*. We have had no mention of any composition of any sort. It may be a mistake of the copyist; it may be a mistake of my own. Possibly Wyclif refers to the *compositio continue ex non quantis*. But when, for instance, there are only three letters, qp^o, so indistinct that q may be q, p, f, and o, a, the only thing to be done is to take the nearest guess in harmony with the *form* of the word. To try and guess what *ought* to have been there would have taken up years of labour in merely transcribing the MS. And, where one out of two or three words might stand for several others, it was no longer practical to note down all the abbreviated forms.

diuturnitatem, sicut magnitudo molis vel parvitas permanencium divisionum; ita quod motus subito non esset velox vel tardus, sicut punctus non est parvus vel magnus. 3^o supponatur quod possibile sit motus et
 5 quotlibet alias formas contrarias eidem simul inesse secundum partes quantificativas diversas; ut sicut contingit unam partem columpne descendere et aliam ascendere, sicut contingit unam partem subiecti calefieri et aliam frigifieri; et sic de aliis alteracionibus oppositis. Et correspondenter contingit simul tempore unam
 10 partem dati corporis condensari vel minui, et aliam augeri. Ex quo plane sequitur quod stat idem simul tempore denominari secundum partes formis contrariis: ut signata A columpna, cuius B medietas sit concentra-
 15 trica, tunc concluditur quod subductis inpedimentis, A simul ascendit et descendit; et sic de aliis denominationibus a formis contrariis. Quicumque enim concedet aliquid denominari secundum partem quantitativam forme habentis contrarium informatam oportet concedere
 20 totum eque inter se denominatum cum parte huiusmodi, sive contrarium insit secundum plus vel minus, sive ratio insit secundum aliquid; ut eque velociter calefit vel descendit A secundum partem millesimam a toto residuo moto contrarie, sive similiter quiescente, sicut
 25 pars fuit talis, mota per totum; et ita sciendum est de quibuslibet formis que habent contraria.

Unde patet quod vanus sit calculus de proporcionem inpedientis forme date secundum eius multitudinem vel paucitatem, respectu forme contrarie. Nam eque velociter calefit A corpus cuius solum millesima pars calefit
 B 131^a 30 per totum gradum alteracionis, ut | toto residuo interim frige facto gradu ut octo, sicut illa pars millesima; et sic simul tempore sit calidum et sit frigidum; et ita de quibuscumque denominationibus a formis contrariis etc.
 35 quo ad omnes auctores vel rationes in contrarium allegandas. Ex hoc patet solutio; quod impossibile est idem subiectum simul et semel secundum idem esse sic contrarie denominatum; et sic specificat Aristoteles et antiqui philosophi rationem contrariorum. Sicut
 40 enim est univoce album [et equivoce nigrum, uno tempore album] et alio tempore nigrum, et secundum aliud

temporal movement alone can be swift or slow.

3rd, that contraries can exist at the same time in different parts of the same subject.

It is, therefore, useless to attempt calculating in what proportion the velocity of the whole is hindered by a contrary form, since there is no real contrariety between speed in one part of a body, and slowness in another;

just as the same thing may be white and black in two different

12. permanent B. 5. quodlibet (!) B. 8. sicut (!) B. 19. habente B; *ib.* sed *pro* oportet B. 34. ex (!) *pro* etc. B. 38. Aristotelis (!) B.
 40-41. et — album *deest*. 41. a'os B.

senses, or
times, or parts.

Why this is
denied; on
account of
Nominalistic
doctrines.

Unless you fix
movement
precisely as to
sense, time,
and part, you
have a
universal
movement
which may
coexist with
any other
without
contradiction.

Otherwise
nothing could
be moved in
part.

Solution of the
question.
Every
movement is as
rapid as its
swiftest part,
and is
measured by
the swiftness of
that part,

This
answers the
length of the
line described,
relatively to the
time.
Answer to the
first argument
contra.

pro uno loco album et pro alio nigrum simul, ut volunt
admittentes multitudinem corpoream satis admittere:
sic idem in numero est idem secundum unam partem
quantitativam album, et secundum aliam partem nigrum.
Et sic de similibus.

5

Racio autem difficultatis ad assenciendum iste sen-
tencie est fluctuacio in rebus communibus, et [doctrina]
illorum qui verbis negant communia preter signa. Nam
Sortem moveri aut esse album aut aliter formatum
est commune ad quamcunque formam talis speciei que
Sorti pro aliquo tempore inexistit. Ideo, loquendo de
forma ultime singularitatis, oportet contraccius speci-
ficare: ut iste motus Sortis est *ipsum moveri isto tem-
pore secundum illam partem acquirendo istam materiam
motus*; quia aliter esset iste motus multiplicatus per
totum, sicut est motus communis. Sicut ergo non
repugnat istum *Sor moveri nunc secundum istam partem
acquirendo istam formam* et simul cum hoc *moveri
nunc secundum aliam partem acquirendo formam con-
trariam moto opposito*: sic stat Sortem moveri simul
et semel motibus oppositis non commixtis, ut per con-
sequens non se inpedientibus a denominationibus propriis.
Aliter enim non esset possibile aliquid moveri secundum
partem; quod est contra philosophum 1^o et 5^o phisicorum,
et contra communem et venerabilem sententiam
logicorum.

Istis tribus premissis, dicitur generaliter quod quilibet
motus velox est ita velox sicut aliqua eius pars, et per
consequens cuiuslibet talis motus velocitas attenditur
penes partem eius velocissimam mensurantem; ut motus
primi mobilis est eque velox sicut motus punctalis
partis in equinocciali, licet quomodocunque tarde
moveatur aliqua pars eiusdem. Et ita generaliter, quan-
tumcunque velociter movetur aliqua pars punctalis per
se mobilis pro quacunque parte temporis, ita velox est
totus motus eiusdem, etsi non secundum quamlibet
eius partem; et patet quod motus localis velocitas
attenditur penes longitudinem situs linealis descripti a
punctali per se mobili velocissime moto in compara-
cione ad tempus mensurans; et sic tollitur instancia de

40

7. doctrina deest B. 20. 8 pro Sortem (S ?) B. 22. ad pro a B.
32. Tenocciali B. 39. mote B.

linea superius facta. Nam probatum est superius quod nullus punctus ultime spere describit lineam; quod conceditur. Verumtamen non moveretur nisi describeret situm in mobilem punctalem linearem. Et si capitur
 5 quod multiplicius describit eundem situm in numero, et per consequens est per quantumlibet tempus magnum in describendo situm circularem, conceditur conclusio;
 B 131^b sed sequencia descripcionis tanti situs equivalet | ac si continue de possibili describeret novum situm. Ideo
 10 causatur pars successiva talis motus, qua velocissime movetur, describendo partem situs huiusmodi sine redicione super illam partem spacii. Et ab illa parte servatur velocitas tocius motus.

Quo ad secundam difficultatem tactam de corpore
 15 simul moto localiter motibus non componentibus unum motum, sicut contingit de astro moto in suo epiciclo, dicitur quod maiorem situm circularem describit quodlibet eius punctale motu epicicli; et alium motum orbis experigencia. Quod patet, quia astrologi sciunt se percipere instrumento quod planeta pro dando tempore erit
 20 in situ celi signato, et in fine temporis sensibilis immediate succedentis, et orientaliter retrogradiendo; quod non erit motu orbis. Et ista experigencia movet eos ad ponendum epiciclos qui sunt circuli non lacerantes
 25 orbem suprapositum, propter eminenciam eorum supra circumferenciam orbis astri; sed includuntur secundum eorum punctum altissimum infra orbem. Quod si non esset talis retrogradacio, sed delatum moveret vertigine, ut describendo situm girativum (ut contingit de sagitta),
 30 videtur michi quod omnem partem situs circumscripta circumduccione describit mobile motu certo; et sic est unus motus habens rationem diversorum motuum, cuius velocitas attenditur penes longitudinem situs girativi. Ex quo sequitur quod velocius movetur quam si, cum
 35 paribus, sine circumduccione attingeret terminum *ad quem* adequate in eodem tempore. Sed longe alius est motus nunc quam esset tunc, ut patet de partibus motus quo ad molem, capientibus individuacionem a situ.

No point of the highest sphere describes a line, but that which is equivalent to a line.

To the second: every planet, by reason of the epicyclic movement, describes a larger circle than it otherwise would do; and thence it is possible for the astronomer to predict that a planet will, at a given time, be in a given place.

If there were no such retrogradation, the velocity of the planets would be measured by the length of the space through which they revolve.

5. m^{leus} B. 17. [^]m B. 10. expigenc^a B; *ib.* qua B; *ib.* fciut B.
 26. includatur (!) B. 31. tracto (?) B. 37. esse (!) B.

19. *Experigencia*. Probably for *experientia*, and belonging to the next sentence: *quod patet experientia*. Cf. l. 23.

To the *third*: note that a circular space is described by the movement, and note the total number of punctal movements which together describe the circle; the velocity that is common to each of the movements will be the measure of the whole.

Objection. The doctrine that the Extended consists of inextended points, is against this velocity of local movement. For take the Equator, the circle immediately above and that immediately below it, with all their points: the Equator moves the quickest, and the other two must stop at a certain moment, while it is moving. This renders it impossible for them to be continuous with it; and so of all the other circles, down to the poles.

Quo ad 3^{am} difficultatem, ubi non est dare punctale aliquod per tempus permanens in circumferencia circumducti, oportet primo, notare situm circularem circumferencialiter descriptum iuxta declaracionem premissam. Oportet 2^o notare totam multitudinem punctalium conferencium instanter ad huiusmodi circuli descripcionem. Et velocitas motus punctalis partis, que est communis ad omnia illa, erit mensura velocitatis tocius motus. Tale enim est commune citra speciem, et supra ultimum singulare; ut patet alibi. Nam punctale extimum huius mobilis, simpliciter intellectum, est commune ad quodlibet illorum. Et patet solucio ad rationes superius tactas, que videntur refugere veritatem. Ulterius, videtur quod assenciendo composicioni continui ex non quantis, infringitur sententia de velocitate motus localis. Nam, capto equinocciali circulo, et circulo sibi immediato, | sive altrinsecus versus polum, sive B 132^a circulo immediate supposito, videtur quod omnes hii 3^s circuli, sicut et omnia sua puncta, continue eque velociter moventur, quia quolibet uniformiter quo ad 2^o tempus et subiectum, et angulum motus alicuius; istorum aliqua pars quantitativa est eque velox sicut aliqua pars alterius. Ergo conclusio. 10^m sic plura sunt puncta in equinocciali circulo quam in altero circulorum signatorum; et pene tot situs punctuales occupat circulus equinoccialis, quot puncta habet. Ergo plures situs punctuales occupat circulus equinoccialis, quam aliter sibi immediatus. Et quilibet punctus alicuius istorum circulorum describit adequate in die omnes situs punctales sui circuli. Ergo velocius movetur quilibet punctus in equinocciali, quam aliquis reliquorum. Et hic videtur quod sit discontinuacio in celo ad quemlibet eius punctum; quia est dare instans in quo punctus in equinocciali describit situm punctalem; et punctus (scilicet immediatus) non, sed permanet per tempus in eodem 35

11. extinuu B. 15. sentenciam (!) B. 17. alt'u^o B. 21. angulus B. 23. pla B. 33. in \varnothing pro instans B. 34. f B. 35. no' B.

1. I suspect Wyclif mixes up the answer to the 3rd and the 4th argument. At all events, I take it that his rule applies to bodies which revolve with varying velocity, as each of the points in a top, for instance. Note that he does not answer the 4th, but passes on to another objection. 23. In my copy of the MS. there is 10^m (!). If we could change it to *probat*ur, or *major probatur*, it would make sense.

situ; ergo, oportet illos discontinuari. Et cum in qualibet circumduccione tante elongabitur, videtur quod per processum temporis quantumlibet distabunt. Et per idem sequitur quod ad omnem punctum circumferencie ultime celi erit discontinuacio.

Ad illud dicitur quod impossibile est aliquod indivisibile velocius moveri localiter quam continue in quolibet instanti dati temporis describere situm suum punctalem; quod cum facit quilibet punctus in equinocciali (ut supponitur), sequitur quod quilibet eorum movetur sibi motu velocissimo possibili. Non enim velocius potest moveri, nisi pro eodem instanti posset esse simul in duobus sitibus, ut dictum est superius; quod est impossibile, quia tunc idem corpus posset dimensionaliter multiplicari per loca. Et ex hoc sequitur, cum veris supra dictis, quod quilibet alius circulus ab equinocciali movetur difformiter quo ad tempus. Nam totalis multitudo punctorum in quolibet minori circulo equinocciali est minor totali multitudine punctorum in equinocciali; et sic de sitibus. Ex quo sequitur quod quilibet circulus sic immediatus equinocciali ad minimum per unum situm punctalem plus describit de sitibus, quam alius extra illum; quod conceditur. Et ultra conceditur quod quotlibet alia puncta eque velocius moventur uniformiter quo ad tempus. Sed vanum est nobis sollicitari quando talis punctus quiescit; cum oportet nos hic ignorare si orbis astri movetur, aut quiescit, astro moto de possibili, ut iudicamus. Supponimus ergo quod in qualibet revolutione, puncto in equinocciali existente in oriente fixo per unum tantum instans, punctus situ immediatus in qualibet istarum linearum sit in situ suo immediato per duo instantia; nec sequitur ex tali difformitate discontinuacio, quia
B 132^b non superius situs | mundi pertranscendendus. Sed si pro
35 quolibet instanti continui pertransiet unum situm cum puncto equinocciali (et sic de puncto immediate versus polum) tunc describeretur situs mundi teres vel lenticularis et non sphericus, cum eque amplum situm circularem describeret quilibet talis punctus sicut aliquis.
40 Ideo oportet ex carencia situs fixi quem describeret

To this we reply that the swiftest possible movement of a punctal substance is one point per instant; and as this is the rate at which the Equator travels, it is evident that every other circle must move slower by at least one point in the 24 hours.

We also admit that the movement is uniform, for each of all these points.

But we can never know at what moment one of the points is at rest.

While each of the points of the Equator changes its place every instant, one of those in the nearest circle remains two instants in the same place; but this does not hinder them from touching. If each of the circles were to describe the same space as the Equator, the world would not be round, but cylindrical.

28. iudic⁹ B. 30. equinoccialis (!) B; *ib.* ex^ute B; *ib.* p^uun B.
32. Irar⁹ B. 37—38. describeret B; *ib.* teres vel lenti^{ar} B. 38. spūs
= spiritus B.

punctus extra equinoccialem, cessare talem situm describere unum pluries et alium paucius, secundum limitationem nature ordinantis talem positionem parcium situs mundi.

It is easy to understand why the centre is absolutely fixed, and the point next to it changes place without separating from it;

in the same way the movement of two points in two instants, and of only one in the same time, do not imply separation, as they follow from the idea of a smaller circle, which supposes a smaller distance to be passed over in an equal time.

Nec est difficile intellectum concipere quomodo punctus centralis manebit fixum et punctus sibi immediatus suppositus in revoluzione diurna acquireret 4 situs adequate sine discontinuacione eius a centro; quia non est situs qui intercideret. Et per idem, A puncto equinocciali orientali pertranseunte duos situs punctales in duobus instantibus; et B, sibi puncto immediato, pertranseunte tantum unum in altero illorum instancium, non foret discontinuacio illorum punctorum, cum posicio circularis situum punctalium requirit quod non intercidat alius situs punctalis. Et idem contingit quando unus punctus movetur, et alius sibi immediatus quiescit. Si ergo duo puncta signata, in equinocciali et circulo sibi immediato, haberent pene tot situs punctales materiali tempore distribuendo, et unus pausaret per instans et alius non pausaret, tunc facta continuacione revolucionum distarent, ut innuitur. Sed modo, proporcionaliter ut punctus pausabit, habebit pauciores situs, describet situm punctalem in quo pausabit; non in primo instanti pausacionis, quia per idem in casu aliquid describeret situm punctalem super quem prope quiesceret; nec in 2^o instanti, quia tunc esset dare primum instans motus pro quo mobile esset in termino aliquo.

Ista autem est difficultas logica, postquam homo moverit scienciam veritatis inveniuntur, ideo menciuntur multi verbaliter concedentes. Michi autem videtur quod omnis descriptio situs punctalis est pro illo instanti pro quo mobile punctale est in illo situ, et in proximo instanti subsequenti est in alio, et per consequens in

12. \widehat{m} B.18. \widehat{p} B.19. \widehat{m} B.

29. *Logica*. This sentence. I have not the slightest doubt, is the exact reading of the MS.; but it has no sense whatever, so far as I can see; probably an important omission. No one who studies this pages can doubt that the copyist was as negligent as his writing is illegible. Dr. Rudolph Beer thinks it was a student's copy, for his own use.

casu posito, in 2^o instanti, et non in primo, describitur
 datus situs. Et sic queritur ut sequens: sequitur ex
 positione continui ex non quantis quod est dare primum
 instans cuiuslibet talis motus; quia, si non, in tali
 5 instanti in quo punctale est in situ punctali, sed in-
 B 133^a cipit | derelinquere ipsum, describit illum: tunc oportet
 quod instanti primo, cum pertransiret illum. Et sic
 describet punctus motus in casu puncta constituencia
 lineam successivam, solum pro mensuris quibus non
 10 essent, posito quod successive generabuntur puncta,
 subiecta puncto subito fluenti, et continue corrumpen-
 tur; ita quod continue sit unus eorum in actu a puncto
 supposito, et sic in fine, quando mobile foret in ter-
 mino ad quem foret ultima distributio divisibilis
 15 proximi: quod est irrationale. Secessus igitur indivisi-
 bilis ab indivisibili est *mutari*, et successivus indivisibili
 proximo est *mutatum esse*. Verumtamen pro illo instanti
 non foret *mutari*, nisi immediate succederit *mutatum*
esse. Et ita in casu notato: pro illo instanti quo indi-
 20 visibile circuli proximi equinocciali incidit in situm
 indivisibilem orientis, est *mutatum esse* respectu indi-
 visibilis proximi precedentis; et pro illo instanti pausant
 instantanter, cum non immediate post illud instans erit
 situs descriptus post illud instans; sed immediate post
 25 illud describitur. Nec est ista pausacio instantanea quies
 proprie, sicut nec *mutari* est motus aut quies. Et ita
 potest dici in omni mutacione subita, quod res pro
 illo instanti pro quo subita sic non est facta, sed incipit
 esse facta; ut contingit de linea, et anima, ac similibus
 30 que fiunt in instanti. Et sic non est, quandocunque
 creatura est facta vel est creata. Nec oportet, si res
 nunc non est facta, et fiet, quod nunc sit illa vel
 aliquid eius fiendum; sed bene sequitur quod ipsum
 est fiendum in tempore suo. Et ita homo moritur pro
 35 ultimo instanti *esse* sui, quando patitur mortem, que
 est *mori*, et immediate post est mortuus, et mors est
 lapsa sua; et sic de similibus.

Notandum tamen quod hoc nomen, *mors*, equivoce
 intelligitur apud multas: ut quedam dicitur mors *spiri-*
 40 *tualis*, et quidam mors *corporalis*. Sed de primo membro
 et eius subdivisionibus foret hic inpertinens nobis sermo.

Difficulty about
 the movement
 from one point
 to the next.

Wyclif
 distinguishes
 between
changing and
having changed
 places.

At the instant
 one point
 leaves its place,
 it *changes*; at
 the instant it
 comes to the
 next, it *has*
changed.

This is true of
 all
 instantaneous
 changes,
 as the acts of
 the mind;

also of death.

Digression
 concerning
 death; its
 divisions:
spiritual and
corporal
 (which we may
 omit);

11—12. corrumpantur (*quite vlain*) B.
 41. hinc B.

15. Lacessus B.

26. quietes B.

absolute or relative;
absolute, when
the being is
no more,

relative, when
a part of the
body dies;
in this there
are degrees;

first the
animal heat
only partly
assimilates;

second, it
altogether fails
to assimilate,
or to keep
together the
parts;

absolute death
is
instantaneous.

Death and life
are opposed;
so the same
body or part
cannot be in
the same sense
dead and alive,
either absolutely
or relatively.

Life is first in
the heart, and
leaves it last.

The change
from life to
death is, like
dissolution, one
from *living*
being to *non-*
living being;
the term *ad*
quem is the
non-entily, the
term *a quo*
is the entity.

It is argued
that at the
moment of
death, the living
and the non-
living entities
are together.

Mors autem corporalis vel dicitur *simpliciter*, vel *secundum quid*. Simpliciter, quando unum simpliciter desinit univoce 2^m partem eius corpoream. Sed mors secundum quid est cuiuscunque partis viventis mortificacio; ut a tempore status [sanitatis] animalis usque ad eius 5 mortem simpliciter, moritur animal quasi continue quo ad partes, dum calor naturalis, primo claudicans, non plene assimilatur, sed in parte digerit adnatam pinguedinem. 2^o plus depauperatus, nec assimilare sufficit, nec assimilatum servare; et tunc defluunt partes continue, 10 quousque vita simpliciter extingwatur. Et illud idem ultimum *mutari* est mors, indivisibilis quo ad tempus, cum sit motus subitus quo aliquid unum denominatur mori simpliciter.

Et cum mors et vita sunt opposita privative, sicut 15 repugnat idem simul secundum eandem partem vivere et mori, eciam morte 2^m quid, que est divisibilis successive; sic repugnat quod idem simul, secundum eandem rationem, vivat simpliciter et simpliciter | moriatur. B 133^b Moritur autem corpus simpliciter, quando secundum 20 quamlibet eius partem quantitativam [que] vivit in illo est mortuum. Et primo in animali vivit cor, vel aliquid cordi propior; et sequentur alie partes ordinate, secundum earum dignitatem. Et breviter, pars cui primo vita adiungitur, ab eadem ultimo separatur; ideo, cor 25 vel minimum eius naturale expectat ultimum *mutari* quod est mors. Et simpliciter vivit secundum rationem positivam quod habet esse viventis; et simpliciter moritur secundum rationem qua mutatur ab *esse* viventis ad omnino *esse* huiusmodi mutacionem, ab *esse* vivi ad 30 *non esse* vivi. Sic enim generacio et corruptio specificantur ab Aristotele penes suos terminos contradictorios utrobique; ut terminus *a quo* generacionis est *non esse*, et terminus *ad quem* est *esse*. Econtra autem est de corrupcione.

35

Nec oportet logicum timere instancias sophisticas, quibus aliqui arguunt quod tunc sunt simul *esse* et *non esse* eiusdem. Nam constat extendentibus verba, et intelligentibus negaciones participialiter in suo tempore,

5. sanitatis *deest* B. 9-10. nisi assimilatum *pro* nec assimilatum.

10. f,raj'e B. 11. m^{la} fm^r B. 15. sic (l) B. 17. z' *pro* eciam B.

20. vunt *pro* moritur B. 21. que *deest* B. 21-22. illa . . . mortua ppor B.

24. bevit' (?) B. 27. fr B.

quod non obest idem generatum quod eternaliter est
secundum esse intelligibile, habere pro dato instanti
esse actuale et pro proximo instanti. Vita enim non
dicit formaliter mutationem, cum analogice inest deo.

5 Sed mors, ut huiusmodi, dicit precedens non esse
actuale; quia infinite intelligendo, est aliquod non esse,
et secundum totum huiusmodi, generari. Et si idem
in instanti proximo subsequenti habet non esse actuale,
tunc simul cum hoc, ut sic, corrumpitur vel moritur,
10 ut [non] sit vivum.

Notandum tamen quod vita potest intelligi equivoce
pro forma substantiali permanente qua vivitur, vel actu
eius successive individuato a tempore. Et de illa que
consistit in successione, ratione temporis adiacentis,
15 quod est plurimum individuans eam longam vel brevem,
est nunc nobis specialiter sermo. Sicut igitur eidem
simul insunt incepicio et desinicio privative opposita,
primum 2^m negacionem de preterito, et ultimum secun-
dum negacionem de futuro; sic vita et mors, cum non
20 sint pure privative opposita (ut visus et cecitas, et
privaciones formarum substantialium et accidentalium,
que non simul compaciuntur inter se secundum aliquem
gradum), sed potius sicut generacio et corruptio, magni-
tudo et parvitas, intensio et remissio et forte lux et
25 tenebre. Et patet quod si aliquid moritur, vel mors
sibi inest altero dictorum modorum, tunc vivit pro eadem
mensura temporis, licet dispari ratione. Illi autem qui
negant compositionem continui ex non quantis dicunt
quod mors vel est *mutatum esse* subiectum in termino
30 vite exclusive, vel 2^o est simpliciter et primarie privacio
vite in corpore quondam unito. Prima est ita in primo
instanti non esse viventis; et 2^a est quantumlibet longa;
B 134^a nec est in | ista variacione, dum tamen sciatur fundare
quod corpus moritur vel mortem patitur quando non
35 est, vel quod anima separatur pro instanti quando non
est anima, aut quod mors non potest esse possibilis,
terribilis, vel timenda. Prior autem responsio est michi
plus placida, et consequens ad predicta.

Si autem queratur quando datus punctus movetur
40 tardius quam punctus in equinocciali vel difformiter

5. precedente B. 10. non *deest* B; *ib.* vum B. 13. individuate (!) B.
22. imit^r B. 2. aliud (in full) B. 26. *bit^r or tunc* (!) B. 31. quodⁱ B.;
ib. beneath ita B. 36. *quo* B. 38. *adp^{ta}* B.

But this is not inconvenient for one who knows how the present may be extended to the part; life may be eternally possible, and actual only at one moment; if the next moment actual life exists no more, then the preceding one was that of death.

Life, however, may mean either the vital principle, or its act, individuated by time; we mean the latter here. Life and death are like beginning and ceasing, both of which may be predicated of the same, but the former is a denial of the past and the latter a denial of the future.

If anything dies in any sense, it lives at the same instant, but in a contrary sense. Those who deny our doctrine of the composition of the continuous, say that death is the change of a subject after the end of life, or the absence of the soul from the body. I prefer the first answer.

Return to the main subject. The question as to when one point moves slower than

another in the
above
mentioned
circles, is
absolutely
useless.

The movement
is varied (in
the subject) if
it be not as swift
as possible;
it matters
nothing that it
is not varied in
itself.

We must
remark that
many words
represent both
movement and
relation at once,
as *ascent* &c.;
and the words
earliness and
rapidity are
taken to mean
the same,
whereas the
former indicate
only a relation
of precedency
in time.
What is early
may be very
slow; a thing
that is very
late may be
extremely
rapid.

quo ad tempus, dicitur quod in quolibet tempore cuius
instans pausacionis est intrinsecum, et solum in tali;
et cum nulla pars quo ad tempus, vanum est verificari
pro quo instanti vel per quod tempus foret motus
huiusmodi. Multe enim sunt iste, et in nulla eius 2^m 5
completam et propriam existenciam. Nullus ergo motus
est temporaliter difformis in instanti; et per consequens
nec per tempus; sed in tempore quo primo est, et
quomodolibet alio cuius ipsum est pars. Si autem
talis difformitas habet esse incompletum in causis 10
suis continue vel non, est huic inpertinens. Ex quo
patet quod non oportet, si talis motus sit secundum se
totum difformis, vel velocissimo remissior, si utraque
medietas dicti motus et quelibet alie eius partes aliquo
tempore non sunt difformes. Quod exinde totus non 15
sit difformis. Patet etiam quod contingit eundem motum
nunc esse velociorem et nunc tardiozem, non descen-
dendo ad instans, sed ad parvum tempus; et semper,
dato tempore, est dare quam velox est, dare motus
pro illo tempore et gradus velocitatis. Est velocitas 20
danda que non mensuratur instanti, sicut nec velocitas
vel motus cuius est passio.

Sed ulterius est diligenter notandum quod sunt aliqua
aggregata ex motu et relatione; ut ascensus et descen-
sus, ortus et occasus, et similia. Et in talibus decipiun- 25
tur plurimi propter ignoranciam distincionis inter
citoitatem et velocitatem, seroitatem et tarditatem. Con-
tingit enim sex signis aliquibus oriri subito, vel occidere,
quantumlibet tarde mota; quia celeritas vel subitacio
talis non recipit velocitatem motus, sed quam cito 30
erit sub horizonte vel supra horizontem. Nam quantum-
cunque festinans vel citus erit quantumlibet tardus
motus; et quantumlibet sero erit quantumlibet velox motus.
Nam citissime vel celerissime est quicquid est in primo
instanti temporis; et plus sero ut ab eo distancius etc. 35
Contingit idem, quamlibet celerius ascendendo, tardius
moveri, et econtra.

3. veri B. 15. after tempore X B. 17—18. descēdo B. 18. f̄p B.
23. dīr B. 32. situs (!) B. 36. afte'do B.

13. *Difformis*. Note above the definition of movement varied
in its subject; a distinction of no value in modern Mechanics.

Sed contra dicta de posicione situum indivisibilium primo celesti videtur sequi quod non sit realiter circumferre, eo quod non est ratio quare unum situm circumferret et duos situs inmedios in ultima circumferencia mundi ex uno latere, quin per idem esset sic ad quemlibet punctum eiusdem circumferencie, cum sit uniformissime curvatis. Et tunc continue pertran-

B 134^b saret punctus maioris circuli duos situs, | dum punctus minoris circuli describeret unum solum; et sic in eadem superficie circumferrent eidem puncto 6 puncta, et per consequens infinita mundi circumferrent eidem puncto quotlibet puncta ex omni latere. Que duo sunt mathematice impossibilia composicioni continui ex non quantis.

15 Item, proportionaliter ut circulus est minor, est curvior; sed ad omnem punctum circumferencie mundi est infinitum magna parvitas, et est uniformis tota curvitas per totum composita ex non quantis: ergo, illa tota superficies est summe curva; quod est summe impossibile. Maior argumenti patet, ex hoc quod si circulus maior mundi diminueretur ad non quantum, stante continue circularitate, ille foret proportionaliter curvior sicut minor: ergo, etc. Aliter enim quelibet porcio equalis foret precise eque curva sicut ipsa circulata;

25 quod est impossibile, cum tunc tantam curvitatem contineret, quanta est curvitas totius equinoccialis circuli. Minor argumenti facti est patula cuicumque qui videt quod circuli paralleli equinocciali versus polum, ut sibi propiores, sunt minores. Cum ergo quilibet punctus dicte circumferencie sit polus respectu alicuius maioris circuli, sequitur quod periret iudicium de parvitate circuli ad quemlibet eius punctum.

Item, circulus equinoccialis est uniformiter curvus, ut sepe captum est, si sub aliquo gradu sit curvus; sed aliqua eius quantitativa pars curvabilis non est

35 curva; ergo, totus circulus non est curvus. Maior patet ex hoc quod quelibet 4^a, vel alia pars, eque distat a centro secundum quemlibet eius punctum: quod non

Objections:

1. If the first mobile could move two points in one part and in another only one, being perfectly spherical, it ought to do so everywhere, and we must either deny its sphericity, or admit that at an infinity of points an infinity of points is moving round each.

2. As a circle is smaller, it is more curved;

now the pole of the world is a point equal to a circle infinitely curved; and each point of the world's circumference is the pole of a circle; this circumference then, though the greatest possible circle, ought to be infinitely curved every where!

3. The Equator must have the same curvature everywhere; but somewhere it is not curved; so it is curved nowhere.

2. p'mo celli B. 3, 4. c'cūta B. 4. īm^{ti} B. 7. vūforme B.
10. circūta et circūtae^t B. 12-13. mat^e B. 13. oponi B. 17. ũta B.
23. pte^t B. 28. palelli B. 28. 1^a pro sibi B. 33. eī B.

esset, nisi servaret equalem curvedinem; ut patebit igitur maior. Sed minor, sic assumpta, sic probatur: pars quantitativa tenet tripunctalis huius circuli; non est omnia; et per idem nulla pars finitorum punctorum quo ad nos oportet quod curvitas sexti punctalis partis, 5 si detur, esset mole divisibilis, et per consequens habet multas medietates partes, et per consequens (cum ad omnem punctum circuli sunt tres ternarii punctorum) sequitur quod ad omnem punctum forent tres gradus curvaturarum. Et sic curvitas foret linearis extensa 10 per arcum ad quemcunque eius punctum, secundum unum gradum indivisibilem. Nam si multiplicetur per tria puncta, tunc in arcu sextipunctalis essent 4^{or} curvitates habentes positionem; et per consequens constituerent linearem curvaturam. Sic est de formis super- 15 additis, quod si detur aliquam proportionem dicti arcus esse rectam, tunc signata illa per A B, et signato centro mundi per C, sequitur quod triangulus A B C habeat duos angulos rectos, contra 32^{am} primi.

This is proved by the fact that the line is formed by a succession of groups of six points, which can be resolved into triangles, of which no part is curved. Taking moreover two apices of one of these triangles in line with the circumference, and the centre of the world, the three points would form a triangle with two right angles.

General answer.
God alone knows the composition of those indivisible things of which the world consists; but we suppose that there is first the central point; this with two others constitutes the smallest possible triangle; another makes the square; then the pentagon, that first begins to approach circularity; afterwards the heptagon, similar to a sphere; and so on.

Pro isto oportet | supponere, sicut supra, quod situs B 135* mundi cum componitur ex non quantis, habeat eorum compositionem, soli deo notam quam nos intelligendo convincimus insurgere ex puncto centrali duobus alitrinsecus copulatis, constituendo triangulum minimum possibilem, et post quadratum A, ac 3^o pentagonum qui 25 primo habeat rationem circuli, cum omnes semidiametri bipunctales ducte a centro ad circumferenciam sunt equales Eptagonus autem primo habet complexius rationem spere; et sic de omnibus aliis numeris circularibus ex hiis dictis. Nec individuatur partialis situs 30 ex isto vel isto partiali corpore situato, sed totus situs mundi individuatur ab hoc in mundo et eius principiis. Parciales autem situs individuantur simpliciter a parte mundi sic magna vel sic posita. Et ita situs parciales immobiles a nullo singulari suo subiecto dependent, sed 35 ex materiali substantia et figura secundum respectum ad immobiles differencias huius mundi. Et tales situs immobiles possunt ingredi quecunque partes mundi

1. pteb^t B. 3. t3 B. 4. oia^m B. 5. esse pro oportet B.
13. pta^m B. 19. f^ul B.; ib. 93 2^{am} p^mnn B. 23. g^uti⁹ B. 24. coplat^e B.
20. deo ubus B. 29-30. t^uubq B. 32. iundo B. 37. after mundi B.

proporcionales aliis egredientibus a communi agregato, acquirendo et deperdendo ex illis sitibus sua ubi.

Ad primum dicitur quod quilibet circulus maior mundi est uniformiter minime curvatis, et quemlibet
 5 eius punctum circumstant in eodem circulo duo puncta; et per consequens in alio circulo maiori intersecante recte speraliter ad punctum datum tangunt ipsum ad
 duo puncta; et punctus semidyametri mundi proxime sibi directe suppositus in quinto ordine tangit ipsum;
 10 et sic quinquarius qui 2^m Aristotelicos est primus numerus circularis sic est principium posicionis punctalium, sic et finis. Alia autem puncta que lateraliter ipsum respiciunt, sive puncto medio illius ordinis incidente, non sunt sic immediata vel ipsum tangencia, nisi forte
 15 equivoce, ut supra dicitur. Et correspondenter de compositione indivisibilium situum est dicendum. Concluditur igitur quod quemlibet punctum circuli immediate equinocciali supposite superstant tria puncta, unum directe terminando dyametrum, et alia duo lateraliter,
 20 que non tangunt nisi indirecte vel equivoce supra. Et tamen totus circulus equinoccialis non excedit datum circulum suppositum, nisi solummodo uno puncto; quia nec oportet nos sollicitari quis sit ille dispar punctus terminans dyametrum solo puncto ab alio differente,
 25 vel credere quod in illa porcione circuli tripunctali sit maior curvitas vel declinacio a rectitudine.

Et patet quod nec sequitur quod quemlibet punctum circumstant puncta infinita, sed et omnia puncta mundi, sicut et tota est universitas materialiter finita. Ymmo
 30 ex compositione continui ex non quantis videtur patulum quod omnium ysoperimetricorum figura circularis sit capacissima; quia da B quadratum, et A circulum punctorum parium, et cum hoc, quod precise tot puncta
 B 135^b contineant prime superficies intercluse; | et patet quod
 35 linea quadrata proximi proxima intra B habet in 4^{or} angulis 4^{or} puncta, communicata 4 suis lateribus; et sic usque ad quadratum centrale minimum. Et per consequens, cum quilibet linea quadrata proxima inferior continet per 4^{or} puncta paucius quam sua exterior;
 40 in circulo autem est excessus solummodo uno puncto;

1. Every great circle has the smallest possible curvature, and each of its points has only two others, one on each side, in that circle. This point is touched by two others, belonging to the great circle that intersects the former circle at right angles; and by a fifth, which is the end of the radius of the sphere; the quinary number being the end as it is the beginning of position in space. Three points only are immediately above every point of every circle that is tangent to the Equator; yet the whole Equator has but one point more. Thus there is not an infinity of points touching each point. Here our system gives a proof that the circle is the most capacious figure of all, on account of the angles of the other figures, which necessarily have points common to the intersecting sides, from the outside to the centre.

2. sua vbi B. 8. fcuu' B. 9. quito B. 10. Ar^{ces} B. 21. cum
 pro tamen B. 34. pe B. 37. qrtu B.

patet quod est clementum multitudinis punctalium in figura A circulari, ratione uniformitatis linee et amplitudinis angulorum supra illud quod est infra B, ratione uniformitatis linee et strictitudinis angulorum. Et ita creditur esse radicalis causa demonstracionis in hac 5 parte.

2. It does not follow, that the more angles a figure has, the less space it contains; quite the contrary.

Nor that a circle can be infinitely curved or small.

Nor that the least curved circle has less curvature than that which is most so; all the points are in both cases equally distant from the centre.

Thus the compound of two points is properly

neither straight nor curved; they begin in the compound of three points, which is the cause of both.

Nec sequitur ex istis quod triangulus magis, et multiangulus minus contineat, sed potius oppositum. Sed bene videtur dicendum contra quod pars porcio minoris circuli minorem curvitatē continet porcione maioris 10 circuli superius; sed omnes completi circuli equalem continent curvitatē. Nec est verum quod in curvitate vel parvitate circuli descenditur infinite, cum status utrobique ponitur ad finitum. Nec obest ad omnem punctum dati circuli minime curvitatē esse gradum 15 curvitatē maximum, qui non sit gradus minime curvitatē. Cum enim quilibet punctus equinoctialis eque distat a centro, nullus est supra alium, sicut nec puncta circuli cuiuscunque concentrici. Unde, sicut nec rectitudo, sic nec curvitas est formaliter in continuo 20 bipunctali; sed primo ad minimum in tripunctali causaliter, que est in qualibet eius parte. Ideo non oportet sollicitari circa partem punctalem rectitudinis aut curvitatē, sed intelligi oportet quod nulla sensibilis porcio cuiuscunque minoris circuli minus curvari poterit quam 25 pars porcio circuli magni mundi, cum gradus sit proximus non gradui curvitatē. Et credo quod non sit dare infra mundum situm conformissime curvum cum situ porcionis circuli magni mundi. Nec est rectitudo per aliquam partem dati circuli, licet nobis videtur 30 superficies proportionaliter curva et constanti colore visibilis summe recta, ut patet de superficie spere aque.

We need not trouble about the angle of tangency outside of the world, until it be proved that space is possible there.

A part of a quality cannot be so intense as its whole;

Nec oportet sollicitari circa quantitatem anguli contingencie tante ex contactu recte linee extra mundum; 35 quia, ut alias dictum est, differendum est a solutione talis argucie quousque positum sit probatum. Nec ymaginari est de curvitate, vel caliditate, vel qualitate simili uniformi quod quilibet pars quantitativa sit eque intensa cum suo integro, cum curvitas eiusdem circuli 40

1—2. infra A (?) B.

11. s¹p⁹ B.

15. omnem pro esse B.

31. calore B.

32. fu⁹ B.

39. que pro quod.

maior mole sit minori intensior, et curvitas cuius-
B 136* cunque | completi circuli summe intensa possibilis.

Unde ista consideracio de extensione curvitat^{is} vide-
tur michi differenter contra quodlibet militare, cum
5 quocunque curvo signato, ad omnem eius punctum
intrinsecum est non gradus curvitat^{is}, et proportionaliter
ut pars circuli est minor, sibi correspondet gradus
remissior curvitat^{is}. Et sic habent adversarii dicere
quod totum circum et quodlibet curvatum est non
10 gradus curvitat^{is} et infinitum remissius in qualibet sui
parte. Et hic vellem quod diligenter considerarent
metaphysicam de puidditate et passionibus curvitat^{is} et
anguli. Tunc enim non mirarentur quomodo curvitas
extensa est maior, nedum movetur mole, sed intencione,
15 qualibet sui parte. Nec dubium quin tota curvitas
quantitative componitur ex parci^{um} curvitate, cum
quelibet pars habet sitaliter propriam curvitat^{em}, que
causat intrinsece propriam curvitat^{em}.

Sed 2^o si dicatur quamlibet partem circuli eque
20 curvatam qualibet et cum toto, eo quod curvitas atten-
ditur penes curvitat^{em} anguli ad punctum extrinsecum
curvitat^{is} (ut circulus maximus est minime curvus; cir-
culus autem in quantum minor fuerit est plus curvus):
contra illud videtur, primo, quod quelibet curvitas con-
25 sequens angulum acutum figure rectilinee foret maior
quam curvitas cuiuscunque circuli, licet in infinitum
magna sit alia. Nam sicut angulus contingencie est
infinitum minor quam angulus rectilineus alius acutus,
ut apparet, sic angulus intrinsecus sibi oppositus est
30 maior quam alius angulus rectilineus. Sic videtur quod
triangulus rectilineus sit infinitum curvior quam cir-
culus, et est comparacio curvitat^{is} ad curvitat^{em}, sicut
anguli ad angulum, quam geometer admittit. Et tunc
esset querendum utrum curvitas trianguli sit mole
35 magna. Sed videtur quod stat A lineam triangularum
ad omnem eius punctum acquirere curvitat^{em}, et nullam
deperdere; et tamen non esse curviorem in fine quam
in principio, posito quod ysocheles curvetur secundum
partem circuli usque ad F ad angulum exclusive. Et

thus the
curvature of
a larger circle
is greater than
that of a
smaller one.
This question
is a difficulty
for my
opponents too.
At every point
of every circle
possible there
is no curvature;
and as a
proportional
part of a circle
is smaller, its
curvature is
less.

Let them
examine with
care what a
curve and an
angle is; they
will then
understand how
a larger curve
is more
intensely great
than a smaller
one.

If they say that
each part of a
circle is as
curved as the
whole, and that
the curvature
is measured
by the angle of
tangency of
each circle,
it would follow
that any curve
tangent to an
acute angle
would be
greater than
that of a
circle,
and that a
rectilinear
triangle would
be infinitely
more curved.

12. q^{te} B.18. propriam curvitat^{em} (sic) B.

20. curvatum B.

25. minor B.

28. a's B.

30. a's B.

34. ee B.; ib. quend, B.

patet conclusio, cum omnis linea sic eque curva sit aliqua eiusdem pars, et quilibet angulus acutus rectilineus sit acucior angulo supra arcum. Casus videtur possibilis, cum linea non potest secundum partem curvari, nisi usque ad punctum terminans exclusive. 5

Besides, in this view circularity and curvity would be identical, and as all circles are equally circular, all curves would be equal, and the circle would be more curved than any one of its arcs, yet incommensurably so; but the semi-circle would be as curved as the circle.

3^o Sic quilibet circularitas est per se curvitas, sed nulla circularitas est maior circularitas quam quilibet; ergo, nec maior curvitas. Et sic sunt omnes circuli eque curvi. Ex quo plane sequitur quod circulus sit curvior qualibet sui parte, et pars eius, ut maior, 10 sit curvior; et nulla curvitas porcionis circuli parificabilis circulo alteri, sed quod sit proporcio irrationabilis curvutatis circuli ad curvutatem cuiuslibet porcionis, sicut trianguli rectilinei ad angulum continencie et angulum sibi oppositum; sed, quibuscunque circulis | B 136^a annotatis, tantam curvutatem continent semicirculi, et omnes sunt correlative proporcionales, licet partes pares circulorum inequalium dispariter sint curvate; ut puta porcio minoris circuli, magis curva. Sed recuperacio est de maiortate proportionalis porcionis maioris minoris circuli. Nunquam tamen venit ad paritatem curvutatis porcionis circuli et curvutatem cuiusunque circuli, cum sint disparis racionis.

Curvature has no quantitative part of the same nature; but it is made up of many different curvenesses. In each point composing a curve there is the least possible subjective curveness, which partial principles of the curve are everywhere united in the circle.

Ex quo videtur quod curvitas circuli non habet partem quantitativam omogeneam, sicut nec figuracio eius; 25 sed habet quotlibet partes quantitativas, que sunt curvaciones. Et est dare certam multitudinem punctualium Deo cognitam in quibus ad minimum est minima curvitas subiective, et in quolibet illorum punctorum; et illa curvitas taliter erit multitudo. Et sic ad omnem punctum 30 circuli communicant in suis principiis parciales curvitates, ut superius dictum est de formis. Et hic est dare maximum circulum possibilem, et minimum, gradusque minorum punctualium Deo cognitorum, in quibus consistunt, dato circulo minimi gradus curvita- 35 tum. Nec est putandum quod in quolibet tripunctali circumferencie mundi sit curvitas subiective, que tunc foret per totum summe aspera atque curva. Sed satis

1. \widehat{c} B. 17. fut B. 18, 19. utp porco B. 19. r'cupa^a B.
19—21. magis—circuli twice; *ib.* rcupa^a B. 20, 21. d^o b^o B. 26. quodlibet, and so on very often B. 27. c'ca B. 28. de' B; *ib.* cognita B. 30. ca^{ter} B.; *ib.* et B. 37. fbmeq³ B.

est quod quelibet pars [sit eque] curva cum qualibet sibi pari; penes hoc attenditur uniformitas curvitat^{is} circuli.

Et si dicatur quod quodocumque due linee recte applicantur ad idem, indirecte causantes angulum, ille angulus est rectilineus, verum est si non sint partes circuli causantes ad omnem punctum sui intrinsecum, elementaliter sed non formaliter, angulum circuli qui correspondenter est multiplicatus intrinsecus sicut curvitas.

It is true that two straight lines, meeting in one point, form a rectilinear angle; but only if there are no parts of a circle at that point.

- 10 Ad 3^m patet ex dictis solummodo quod prima consequentia non valet; quia satis est quod quelibet pars curva sit eque curva cum qualibet sibi pari quod est sperale. Et ulterius de rectitudine angulorum duorum trianguli rectilinei, eo quod quelibet
15 semidiameter circuli causat ad eius circumferenciam angulum parem cum qualibet, et per consequens, una diametro stante orthogonaliter super arcum, tangendo angulum rectum, causabit et quelibet: quotlibet sunt petitiones, descripciones, et conclusiones geometricæ
20 que videntur refringere istam sententiam; sed omnes, ut dictum est, intelliguntur de illis angulis et figuris ymaginacioni subditis; nos autem loquimur de illis que a solo intellectuali nosci possunt, ut docet Augustinus in *De Quantitate Anime*. Quod si quis dicat quod eque
25 verificantur omnes conclusiones geometricæ de pure intelligibilibus, sicut de ymaginibus, leve verbum est et
B 137^a sine probacionis efficacia eructatum; | et ideo non creditur sibi, nisi efficaciter approbetur. Quod si dicitur capacissimum et multos alios expositores Euclidis illud
30 asserere; revera multi subtiliores, ut Pitagoras, Democritus, Plato, Epicurus, et inter moderniores Lincolniensis cum aliis, sequentes tramitem veritatis, constanter asserunt oppositum. Ille tales topice rationes in materia doctrinali, deficiente demonstracione, adducte,
35 indicant defectum garulum argumentorum. Sic dico quod nulla est conclusio demonstrabilis in continuis, quin sit demonstrabilis in lineis [et] numeris; sed forte non econtra, propter ampliacionem subiecti prioris.

3. As for the third objection, the first part proves nothing; every part of the Equator is curved, and equally so. As for the argument of two right angles in a triangle, the radius falling at right angles on two points touching each other, there are many other *dicta* of geometry seemingly against our system; but they only concern such figures as can be imagined, not those which are only conceivable by the mind, and there is no foundation for asserting that these latter are subject to geometrical laws. In that respect, authority is in our favour; and to bring forward such arguments proves a want of better ones.

1. sit eque *deest* B. 2. pes *pro* benes B. 4. illius B. 7. electer B.
11. quelibet *pro* qualibet B. 17. cando B. 20. refu'g'e B. 23. mte^a B.
25. verificatur B. 27. erugatum B. 29. capa^m B. 30. pita-
go'ess B. 32. tnnat^e B. 37. qu B; *ib.* et *deest*.

We have
already pointed
out that
geometry goes
no farther than
to insure
sensible, not
absolute,
exactitude.
No one can
ever give the
exact value of

$\sqrt{2}$
(relation of the
diagonal to the
side of a
square)

nor prove the
commensurabi-

lity of one
arc with
another,
nor find the
relation
between the
diameter and
the

circumference.

All we can do

is to get at

such probability

as is either

truth or beyond

correction by

the senses.

All scientific

certitude lies

in numbers:

things sensible

are liable to

confusion and

error, and

therefore we

are not happy

here below.

It may be said

that we can get

absolute

exactitude thus;

if A is divided

into B and C,

B exceeding C

by one point,

then we have

Some will

answer: It may

be called the

double, but it

is not the

double of

either.

But you cannot

call anything

that which is

impossible,

Et patet quod conclusiones geometricæ non demon-
strant cum precisione, sed cum exclusione erroris sensibi-
lis; sicut dictum est de divisione cuiuscunque continui date
linee, vel dati anguli in duo equalia. Sed modicus in prin-
cipio error maiorem efficit in processum in fine. Patet quod 5
nullibi demonstratur cum precisione medietas propor-
cionalis duple, cum petitur quod quanta sit proporcio
cuiuscunque dyametri quadrati ad suam costam sicut
alicuius quadrati dyametri ad suam costam, quod arcus
sit de numeris et per consequens de continuis claudicare. 10
Ymmo, capto quocunque quadrato, cum sit quotlibet
dyametri 2^m capcionem punctalium variate, incertum
est cuilibet geometrico de quantitate et proporcione
intelligibilis dyametri; sicut, secundum Lincolnensem,
incognitus est sibi numerus punctalium sibi compo- 15
nencium; et de dyametro sensibilis habet coniecturam
probabilem vel veram, vel veritate in propinqua, a
sensu incorrigibilem. In numeris ergo cognitis absolutis
consistit certitudo sciencie; et in sensibilibus langwet
erroneus et confusus. Quamvis, secundum Augustinum, 20
scimus quod corpus omogeneum, eo quo numerosius
est, mellius aut magis esset; sed cum ignoramus
numerus adequatum, et per consequens bonitatem
atque magnitudinem numerati, non possumus vere dici
cum tot langwidis ignoranciis hic beati. Ideo vere dici- 25
tur quod beatitudo non consistit obiective in athomis
Epicuri.

Et si dicatur quod sicut variatur medietas maior
continui, que indivisibiliter plus excedit, sic potest dici
quod totum habet se in proporcione dupla ad utrumque; 30
quamvis zophista concederet conclusionem, dicens quod
tam proporcio 5 ad 3^a quam quinque ad duo potest
erronee dici dupla, non tamen exinde sequitur quod
sit dupla: videtur tamen michi quod nemo potest dicere
porcionem huius esse duplam, sicut nemo potest 35
dicere vel intelligere quod non potest esse; ut hic
supponitur ex alibi declaratis. Cum ergo prima ratio
mensurandi reperiatur in numeris, excludens cum pre-
cisione quantitatem ad quantitatem porcionis, attinet
errorem quemlibet secundum superhabundanciam vel 40

9. arc⁹ B.
35. cc² B.

16. fl¹¹ B.

21. uu^osius B.

34. eo quod B.

defectum; sic quod si A est duplum ad B, non est plus vel minus quam eius medietas; et sic de aliis
B 137^b proporcionibus est sciendum. |

Consequenter restat dicere penes quid velocitas augmentationis attendi debeat; primo tamen supponitur quod motus augmentationis sit motus secundum quem substantia maioratur. Ex quo patet quod distinguitur a diminutione et motu locali, cum nichil diminutione formaliter maioratur, licet diminutio unius faciat ipsum
10 vel aliud maiorari et habet tam terminum *ad quem* quam materialem quantitatem. Et multo evidencius, nec motus localis nec augmentacio est alteracio. Licet enim motus localis sit ad quantitatem continuam, quia ad locum illum, non tamen acquirit sibi [qualitatem] for-
15 maliter sive intrinsece, sed ubicacionem, que est septimum genus entis. Ideo dicunt philosophi quod tantum in 2^{bus} predicamentis, scilicet in quantitate, et qualitate, et ubi, est motus, ut per se materiis motuum priorum.

20 2^o supponitur quod, augmentatione large accepta convertibiliter pro maioratione substantie, est aliqua augmentacio communiter dicta et aliqua proprie dicta augmentacio communiter dicta est maioracio inanimate substantie. Augmentacio vero proprie dicta est in mai-
25 oracione substantie animate per corporeum nutrimentum quod sibi assimilatur. Prima autem maioracio nomine rarefactionis, et 2^a nomine augmentationis appropriate exprimitur. Et differunt, ut patet ex dictis. Nam iuxta sententiam Aristotelis (primo De Generatione), ad augmentationem proprie dictam requiruntur 3^a per ordinem:
30 primo, quod moveatur idem subiectum a principio usque ad finem motus inclusive; sed hoc commune est cuilibet motui successivo, cum motus capit unitatem a subiecto.

2^o oportet quod quilibet pars quantitativa sensibilis
35 primo aucti secundum formam eandem sit aucta; et consimile oportet contingere in quolibet motu successivo. Et 3^o oportet quod fiat per alimentum cor-

if A is the double of B, B cannot be more or less than its half.
Of velocity in the movement of augmentation.

1. It is the movement by which a substance becomes larger.

This distinguishes it from diminution and local movement, and both it and the latter from alteration; for instead of different qualities, they only imply a new site acquired.

2. There are two sorts of argumentation; in a wide sense it includes expansion even of an inanimate body; but it strictly means only the increase of an animal by nutrition. Aristotle says that in this movement the same subject must be increased,

that the sensible increase should bear on each part of it; and that it should be

11. materiam B. 14. qualitatem *deest* B. 16. est (!) cutis B.
20. augm̃tative B.

9. *Diminutio faciat ipsum . . . maiorari.* As, e. g. the pruning of a tree causes it to grow more vigorously

caused by the
assimilation of
food.

We must
remember that
every
individual is
individuated by
what causes it,
and that the
form which
actualises
a substance
is indivisible.

3. So long as
an animal
exists, its form
remains the
same, but its
matter may
vary,

and must do
so; increasing
therefore at a
certain time.

Digestion
begins in the
mouth and
stomach;
it continues in
the liver and
the midriff (?)
whence a part
is expelled into
the bladder;
and it
terminates in
the heart.

In the capillary
vessels there
is an action
going on which
is the last
compliment of
augmentation.

poreum adveniens similanti; quod speciale est augmen-
tacioni. Sed iste due posteriores condiciones habent
difficultatem aput irretitos in singulis principiis. Ideo
notandum, ut allibi diffuse exponitur, quod omne sup-
positum speciei capit individuacionem ab omni illo quo 5
capit causacionem; et sic est dare gradus individualibus
singularium secundum ydemptitatem numeralem unius
vel plurium causarum a quibus individuacionem huius-
modi sorciuntur. Sed notandum quod quelibet forma
substancialis mixti et specialiter anima quecunque, 10
subiectum suum immediatum actuans, est indivisibilis
quo ad molem. Sed et illud declaratur alibi diffusius.

Ex quibus 3^o potest convinci quod, manente eodem
animali, manet eadem forma, a qua caput vel aliud
organum habet propriam quantitatem. Et per consequens, 15
licet nova materia adveniat vel antiqua defluat, tamen
manet eadem pars quantitativa in numero secundum
formam, cum manet eadem forma in numero licet
materia varietur. Nec exinde sequitur migracio forme
vel eius incorruptibilitas alium infinitans. Quamlibet 20
ergo partem quantitativam | primo aucti sensibilem ma- B 138
nentem eandem in numero secundum formam, oportet
in aliqua parte temporis augmentari.

Nec obest quotlibet elementorum in humidorum
inimicicias generari, cum sita prima digestionem in ore 25
et stomacho, et separato in puro terrestri ac per in-
testina demisso, oportet in epate celebrari digestionem
secundam subtili, a quo in epato mitricori expulso a
venibus ad vesicam; et 3^o in corde alimento decocto,
vel subtilius primo virtus regitiva distribuit per arteries 30
et venas spiritus triplices cum sanguine membris augen-
dis, quantum exigunt de natura. Et adhuc in venis
capillaribus secundum rorem causabilium et glutinum
est quantum sensibilis destillacio, et membrorum attrac-
cio, ad motus augmentacionis ultimum complementum. 35
Et sic semper manet membrum spermaticum aparentibus

3. unt'tos B.; *ib.* finlis B. 24. hunor^e B. 27. tolebrari B.
28. subum B.; *ib.* ago B.; *ib.* mit'co'i B. 33. ca^u cambium (?) B.

28. *Mitricori* and below, *mit'ti*. I have rendered this as the
'midriff', but only on account of the peculiar resemblance of
sound with the word, for I have not succeeded in finding it
anywhere. The whole passage is very corrupt.

contractum, humido cibali comixtum; sic quod nunquam est pars huiusmodi secundum formam ex pure cibali humido integra, sed ex humido seminali quod est subiectum immediatum et essenciale vite vel anime.

5 Forme quidem complexionales inducuntur in cambium, quod continuatum cum membro augmentato, nec augetur, nec membri materia; sed membrum manens idem, non secundum materiam, sed secundum formam multiplicatam per totam materiam antiquam et novam, est per

10 assimilacionem factum maius; et quamdiu manet vis assimilativa mitriti ut membrum secundum terre dyametrum fiat maius, tamdiu manet augmentacionis potentia. Unde, sicut vis vini per aque infusionem adeo ebetatur quod non sufficiat ulterius aquam commutare;

15 sic vis augmentativa, per infusionem cibalis huiusmodi, paulative remittitur; ut in pueris quidem propter membrum molle, commixtioni obediens, sic quod propter virtutis fortitudinem est augmentacio satis velox. Et ad terminum status augmentati, claudicante calore, assila-

20 cionem completant, in adipem vel arvinam animam; et deum in seminio, mortificatis corporalis spermaticis, defluit cibale humidum cum humido naturali, quo usque subiectum anime sit consumptum ad imum naturale.

The semen, given by the parents always remains in the body, combined with the humours produced by alimention; and this compound seminal humour is the immediate subject of life. The matter of the body is not itself increased; but the form (or soul) takes new matter to itself, and each member is increased by assimilation, so long as the assimilative power of the midriff remains entire. But this assimilative force diminishes as more matter is assimilated.

Et patet quod augmentacio differt a nutricione, a

25 mixtione, et a corporis inanimati assimilacione. A nutricione, cum sit maioracio, et sic nutritio; a mixtione, cum auctum non ut sic confunditur, sed quantificatur; et ab inanimati assimilacione, quia nutrimentum digerit, preparat, distribuit, et ad sui complementum

30 convertit. Unde, si lapis aut vinum haberet vim attrahendi humidum cibale, et convertendi ad sui conservacionem, ut habent vivencia, proprie augerentur. Nunc autem fit totum novum, et naturaliter deest virtus et organum, cum natura in [in] animatis non intendit

B 138^b talem finem | .

Augmentation thus differs from nutrition as it implies it from combination, since that which is increased merely gains quantity; and from the growth of inanimate things on account of the vital changes it produces.

Ex istis tamen potest caveri error in quo quondam desipui, quod humidum cibale sit in aucto inbibitum, usque ad coextensionem alimente cum aucto; et sic humidum cibale foret eiusdem complexionis vel

It is a mistake to think that the alimentary humour is not distinguished from the being which it nourishes;

5. canibm B. 11. mit^{ti} B; *ib.* terram B. 17. et *pro* sic B.
19. calore est B. 20. armna B. 21. fenio B; *ib.* mortit^{is} B. 23. 9fupⁱⁿ
adim^m B. 29. di'git = dirigit? B. 34. animatis B. 36. in quod, B.

temperancia cum humido naturali quod natura ex propria materia et virtute informativa in matrice dirigit. Et sic posset homo pro statu lapsus naturaliter perpetuari, cum anima foret indifferens habere humidum naturale vel humidum cibale pro subiecto: quod est impossibile. 5

Oportet ergo quod sit unum essenciale subiectum vite vel anime, cui cibale humidum sit continens, et illud subiectum oportet debilitari continue, cum commixtio sit tam tenera quod necessitatur dissolvi et ab extrinseco dissolvente et ab intrinseco; sic quod, posita 10 optima conservacione possibili nature sic tenere, dum medium continens celum cum suis qualitatibus sic ipsam respiciant, est inevitabile quin vel ocius vel in fine sue peryodi corrumpatur. Sed sicut segetes infra annum naturaliter maturescunt, et, quantumcumque bene servate, 15 ad ultimum dissolvuntur; sic sciendum est de homine et de quocunque animali. In quolibet enim anno solari, deditus optimo regimini, inevitabiliter veterascit. Tunc vero foret accio tardissima inter calorem naturalem et humidum 2^m mocionem celi per medium continuitatis 20 et nutrimentum appositum instrumentaliter transmutatis, et istam mutacionem celi limitantis periodes, ex 2^o De generacione. [Hoc] pretermittunt pueri, putantes ex proporcionis equalitate, vel eius diminucione, accionem in mixto posse cessare similiter, vel remitti, vel tardari 25 eciam ad omnino [non] gradum. Sed indubie oportet tunc prohibere celum difforme, ne sic, secundum diversos angulos radiorum variatorum in fortitudine, currat sibi opposito in circuitu, et percuciat sic varie partes mixti; et quod partes hominis uniformis mix- 30 tionis haberent continue alimentum eis adequatum: quod est impossibile propter necessitatem et omogeniarum parcium, et propter impossibilitatem motuum quibus paulative partes alimentum attrahunt, conglutinant, extendunt. 35

Sicut ergo humidum unctuosum, superfusum liquori, non impedit simpliciter eius consumpcionem, sed mitigat; sic huiusmodi cibale non impedit simpliciter consumpcionem huiusmodi radicalis. Quod si celum

for then man
might be
immortal by
nature, the
subject of life
being
indifferently the
humour given
by nature and
that supplied
by food.

On the
contrary, this
first subject
of vitality must
be continually
weakened by
the mixture of
fresh elements,
until the time
of dissolution
comes;
just as we see
that corn ripens
in the space
of a year, but
cannot be
made to live
longer.

And there
is besides an
action of the
celestial
spheres on the
human body,
limiting its
duration;
to which some
pay no
attention,
thinking it
can be
indefinitely
weakened.

The alimentary
humours
hinder this
action of the
spheres.
If the heavens

2. mat'ce B.

11. ten^re B.

13. vtia notia? B.

20. 9ti^a B.23. Hoc *deest* B.26. adomio; *ib.* non *deest* B.29. 1^a fbioto B;*ib.* pertuciat B.36. Ach^{mo} B.38. sed *pro* sic B.

staret, et elementa in homine essent ad tantam equalitatem proporcionaliter sublimata quod non dissolveretur per accionem ab intrinseco, nec egerent influencia celi ad regulandum modum sue
 5 peryodi, nec extrinseco alimento, tunc, inquam, compatitur secum, ymmo consequitur mortalis corporis ad anime unionem, non solum immortalitas, que est dispositio cum qua corpus hominis stat non mori; sed dispositio cui repugnat mortem succedere
 10 vel coesse. De istis autem disposicionibus, quomodo sunt philosophice possibiles, est teologorum discutere.

Quo potest caveri error quo creditur auctum, a
 B 139^b principio | augmentationis usque ad finem, continue augeri. Tunc enim foret omne auctum per tempus
 15 sensibile summe magnum; quia si in quolibet eius instanti intrinseco per continuacionem cibalis humidi, eciam secundum minimum naturale, foret tanta quantitas novi corporis aquisita, oporteret ut agregatum in fine servatum excederet totum mundum. Oportet ergo
 20 quod in certis instantibus, finitis eciam nobis, licet incognitis, fiant continuaciones minutarum parcium alimenti. Et per consequens oportet quod finite mutationes instantance principient motum augmentationis, quem commentator ponit componi ex multis motibus
 25 et multis quietibus. Unde superfluum est credere quod augmentacio pro quolibet instanti a suo principio usque ad finem maneat continue, cum multis morulis intercisis. Sunt motus augmentationem preparatorii, ut alteratio, motus localis, rarefaccio, condensacio, com-
 30 mixtio, nutricio, et conversio alimenti: ex quibus (ut principiis) augmentacio resultat. Nullus enim illorum motuum est augmentacio vel eius pars quantitativa, sed requisite ad augmentacionem concomitans.

Et quantum ad continuacionem augmentationis temporalem, dicitur ut supra, quod ipsa est adequate per tempus compositum ex instantibus intercisis, et pro mensuris mediis non existit; in quibus tamen habet disposicionem vel potenciam propinquam ad existenciam actualem. Et correspondenter dicitur de servacione,

were motionless and all elements in perfect equilibrium in man, then man could not only escape death, but death would be impossible. How far such conditions are possible, is a question of theology.

We must not suppose that this movement of growth is continual from first to last, for then the body would grow larger than the whole world; it must take place at certain instants, by no means infinite in number, and thus it is composed, according to Averrhoës, of many movements and rests.

There are different acts which prepare it, none of which is augmentation, but a necessary accompaniment thereof.

During the instants at which it does not take place, it merely remains in abeyance; so also of conservation.

5. \widehat{tt} \widehat{tuq} B. deest B.

6. mortalitas B.

21. in concretis B.

10. coëc B.

23. augonis B.

18. oportet; ut

28. ppatoy B.

30. nut'co B.

That augmentation can recommence after disappearing, proves nothing; for we know that undulatory movement, the act of walking, &c. are not continual motions.

It is a collective entity, like sound, or a people, or a heap of things.

Objections.

1. A movement, past or future, is non-existent.

2. Every movement must either be continuous, or not be at all. Our system solves these very easily.

3. If a movement does not exist at a given instant, its contrary exists then; two contraries in the same subject.

But two contraries can exist in their time and place.

4. We must guard against thinking that the subject of the augmentative force is a continuous quantity.

It is said that if it were so, no increase would be possible.

que ex magna augmentacione elicitur. Nec movet quod augmentacio vel ens post sui corrupcionem reincipit; quia talia successiva, tempore discontinua, 2^m partes frequenter desiniunt et incipiunt sicut continua, licet non possint, postquam totaliter deficerent, 5 reincipere eadem in numero. Nec illud negabitur circumspicte ab aliquo qui concedit tremorem, sonum, saltum vel motum aliquem ex reflexis motibus aggregatum. Sicut ergo progressus vel saltus per stadium requirit multas quietes interpollatas requisitas pri- 10 marie ad partes posteras, et ex omnibus illis fit una progressio aggregata seu cumulata; sic proporcionaliter de augmentacione est ponendum. Unde, qui negat talem motum, negare debet omnem sonum, omnem populum, et acervum. Evidencias autem que videntur 15 in oppositum militare, facillimum est deceptis solvere.

Primo quidem creditur, sed nimis erronee, quod motus in instanti preterito vel futuro eo non est quod in hoc instanti deest. 2^o false creditur quod motus talis non est nisi secundum quamlibet eius partem sic 20 vere continuus. Sed hoc non sapit vere ponentibus composicionem continui ex non quantis, et ponentibus omne totum ex partibus esse collectim, omnes illas quantumcunque fuerint separate. 3^o probatur erronee quod, si motus pro dato instanti non fuerit, pro hoc 25 tunc est quies sibi opposita; tunc non similiter vel si est, sicut et quies; et, quia motus et quies sunt contraria, tunc eidem subiecto duo opposita | simul insunt: B 170^b ignorando quod duo opposita, sicut suis temporibus, sicut et suis locis, utrobique sunt sic simul. 30

Quarto, caveri debet de subiecto motus augmentacionis, ne credatur ipsum esse mole continuum aut quantum. Condam enim putavi istam rationem demonstrative procedere per omnem partem antiquam aucti est quies augmentacionis continuencia, et per 35 omnem partem assimilacione alimenti noviter generatam. Est etiam continue augmentacionis privacio, quo ad omnem punctum augendi, est continue augmentacionis privacio, et per consequens non est possibile aliquid augeri; cum hoc oporteat, si aliud debet augeri, oportet 40

2. mlens *pro* vel ens B.

pro quarto B. 32. aut non B.

16. ddecept^o (?) B.

26. t^h B.

31. c^o B.

37—39. Est — et (!) B.

quod per totum sit continue non gradus talis motus. Nec valet dicere quod aliquis motus multiplicetur; quia per idem quilibet; et sic per idem nullus foret difformis quo ad subiectum; sed habens motum non movetur, 5 cum motus quilibet sit ubique. Et hic oportet notare minimum subiectum augmentabile, et per ipsum oportet intelligere gradum augmentacionis mole indivisibilem multiplicari, ut dictum est de aliis formis, que individuacionem suscipiunt a subiecto, et quotquot sunt 10 partes huiusmodi primo aucte, tot sunt augmentaciones mole indivisibiles que constituunt totum motum.

Unde, ad cognoscendum fundamentum huius materie, oportet scire quod parcium hominis sunt quedam simplices, et alie ex eis composite. Simples autem 15 spermaticæ sunt os, cartilago, et ligamentum, nervus, arteria, et vena; et quandoque non spermaticæ, ut caro, pinguedo, adeps, auxongia, villus. Et ita sciendum de medulla, pilis, et unguibus, que ab aliquibus vocantur membra, et ab aliis partes superflue. Cuiuslibet enim talium quilibet pars quantitativa per se sensibilis [est] eiusdem rationis cum toto. Ideo dicuntur simplices quo ad alias quantitates. Unde vene, corda, panniculus, et cuncta que sunt mere spermatica, musculus et lacertus, que sunt partim spermatica di- 20 cuntur consimilia; quia multum accedunt ad omogeneitatem membrorum simplicium.

Membra autem composita sunt, que ex istis quantitative specialiter componuntur, et ex illis integrantur: membra officialia, intrinseca et extrinseca; ut cor, cerebrum, epar, testiculi, caput, brachium, tibie, cum sibi 30 similibus. Post 3^s quidem digestionem, generatis 4^{or} humoribus et 3^{bus} spiritibus, augentur tres manieres membrorum constancium. Sed membra simplicia et membra consimilia, membra composita communiter; 35 et cum quodlibet istorum membrorum habent quotlibet

But the smallest possible subject of this force implies that one indivisible degree of augmentation can be multiplied, like all other forms individuated by their subjects.

Certain parts in man are compound organs, and others are elementary tissues. To the first belong bones, cartilage, tendons, nerves, arteries and veins; also flesh, fat, and villi; each part is of like nature with the whole.

To the second belong organs composed of the first, as the heart, the liver, the testicles, the head, the arm, the thigh, &c. The latter are augmented by digestion, but the former have many parts that cannot be augmented.

9. quodquod B. 10. aucta B. 16. vere or non (?) B. 17. auxugi^o B.
21. est *deest* B. 23. pan^oiclus B; *ib.* cunctis B. 34. gut^o B. 35. habet B.

15. It is not easy to understand what Wyclif means by *spermaticus*. Possibly the word signifies those tissues, that (as he supposes) have been formed directly from the semen; and then we must understand in the same sense the expressions 'membrum spermaticum', and 'humidum seminale' which he says is the first (or direct?) subject of the augmentative force.

partes quantitativas (quia elementa) que non potuerunt augeri; sicut ubique est non gradus motus nature immobilis, et tamen ubique est motus mundi. Sic ergo ubique per subiectum primo auctum est augmentacio, cum uniformiter quelibet pars quanta primo aucti pro 5 tempore augmentacionis augetur proprie; et per consequens habet in se augmentacionem | huiusmodi B 140^a successive; vel aliter est principium intrinsecum ita aucti, et tunc habet augmentacionem multiplicatam per se totum. Et patet quod assumptum argumenti peccat 10 in materia, cum multa membra antiqua augentur, et per consequens partes quantitative inaugmentabiles non subiciantur quieti ab augmentacione, cum eius oppositum non sit natum formaliter inesse. Conceditur tamen quod tam per partem novam quam per 15 partem antiquam est augmentacio modo suo, et simul cum hoc eius privacio, sicut Deus qui natus est inesse menti per gratiam, deest menti peccatrici ob eius culpam, licet assit secundum eius essencialem conservanciam. Sic augmentacio deest elemento secundum 20 formalem et denominativam inherenciam, licet insit secundum naturalem causanciam.

Et quo ad velocitatem motus augmentacionis, dicitur quod attenditur penes quantitatem aquisitam primo aucto, in comparacione ad tempus. Non enim 25 est continue nova quantitas per totum, ut sompniavi quando negavi composicionem continui ex non quantis. Et proportionaliter dicendum est de rarefaccione. Illud enim rarefit velocius quod per equale tempus vel minus occupat cum corpore inhibito plus. Et tantum de situ 30 corporeo. Et de tempore notandum est primum instans et ultimum; et in mediis instantibus dicendum est motum esse, vel 2^m existenciam mutari, aut mutatum esse, vel secundum disposicionem aut potenciam propinquam in suis causis proportionaliter, sicut motus 35 dicitur inesse corporibus.

Et de istis incidit tractandum de velocitate motus alteracionis. Sed primo, supposita communi noticia

Everywhere increase takes place by means of the first subject of augmentation, without its being necessary that the rest should increase in itself. Yet the rest increases in one sense, though it does not in another; as God has essential presence in the soul of the sinner, while He is absent from it by His grace.

The rapidity of increase is measured by the size acquired, and the time taken;

so too for expansion.

Time is indicated by the first and last instant; during the interval the action is going on but not complete.

Of Alteration: its velocity. Properly speaking, this

3. S^e B. 26. nova B. 33. exuā³ B.

37. *Alteration* often sounds badly here, hardly agreeing with the usual English sense of the word; but the other expressions — change, mutation, modification, &c. — do not render the precise meaning any better. It is a *material*, but not *substantial* change.

de alteracione, quod est et quid est, notandum quod
 solum substantia sensibilis est proprie alterabilis, cum
 totum genus motus successivi sensibile commune sit.
 Substantie autem sensibiles, ut forme et materie; et
 5 intelligencie sunt alterabiles alteracione communiter
 dicta, acquirendo bonitates, sciencias, et alias qualita-
 tes spirituales non habentes contraria, sed privative
 opposita. Sed fundamentaliter cognoscendo substantiam
 alterabilem, oportet cognoscere materiam vel formam
 10 et earum compositionem, cum substantia sit prior
 accidente, cognitione et definitione et tempore. Quo
 ad noticiam, ymaginandum est igitur unam essenciam
 corpoream, in principio productam, esse ex indivisi-
 bilibus composita, et occupare omnem locum possibilem
 15 nec esse secundum eius partem aliquam corruptibilem,
 nisi forte per divisionem vel separationem unius par-
 tis a reliqua. Sed cum oportet illam totam essen-
 ciam habere quamcunque partem talem aliquam
 continuatam, patet quod illa essencia simpliciter est
 20 incorruptibilis; et illa essencia primo fuisse concipitur
 sub ratione qua ens simpliciter, et nec ut ignis vel
 aer, vel cuiuscunque alterius generis vel speciei;
 quomodo gramatici dicunt pronomen singulare meram
 substantiam. Sed philosophi, ulterius considerantes,
 B 140^b quamlibet | talem essencialem essenciam esse unum
 absolutum cui per se competit substare accidentibus,
 tribuunt sibi substancialitatem. Et post modo, con-
 siderata eius extensione, attribuunt sibi corporeitatem
 quam Linconiensis vocat lucem. Et 3^o formam generis
 30 proximi, ut animalitatem, lapiditatem vel aliud huius-
 modi. Et quarto, considerata ratione sufficienti, at-
 tribuunt sibi forma specialissimam; ideo dicunt philo-
 sophi quod substanciarum alia materia, alia forma,
 alia compositum ex hiis. Unde substantia corporea,
 35 que est genus, non univocatur, nisi et compositione
 ex materia et forma. Sed quando loquimur de ma-
 terie et forma tantum, vocamus ipsas ipostases, vel
 naturas, vel supposita.

Considerando ergo specialiter partem sublunarem
 40 mundi esse in potencia ad esse ignem vel aerem (vel
 sic de aliis sensibilibus corporum), posuerunt potenciam

being a
 successive
 movement,
 only
 matter can be
 altered;
 but intelligent
 beings
 undergo
 alteration in a
 wide sense.

There is one
 material
 essence,
 created in the
 beginning,
 composed of
 points, filling
 all space, and
 incorruptible,
 except in so
 far as one of
 its parts may
 be separated
 from another.
 We conceive
 that this
 essence was
 firstly mere
 being,
 just as the
 singular
 personal
 pronoun
 denotes mere
 substance.
 Philosophers
 call it
 substance or
 body because
 of its
 extension.
 Matter, form,
 and compound,
 are different
 sorts of
 substance, but
 this corporal
 substance is of
 the same
 nature as the
 compound.

Restricting our
 speculations

to the
sublunary
world we see
that every part
of it *may be*
fire, air, &c.:
this possibility
is *matter* —;

fireness,
airness, &c. is
form; and the
resulting whole
is fire, air, &c.

Each are
different and all
three are the
same
essence.

Matter is the
first out of
which
necessarily
proceeds form;
nor can form
be without
matter; nor
can the two be
without the
compound.

I grieve to
have once
fancied that
matter and
form were
absolute
separable
realities,
forming a
compound by
mixture, like
two liquids,
with
superadded
accidents:
I repudiate
this opinion.
Every bodily
substance is
not one, but
three.

Plato's opinion,
admitting that
the same
matter (or
essence) is now
fire, now air,
&c.,

is tolerable,

esse talem materiam; et igneitatē, aeritatem vel lapideitatem (et sic de aliis), esse formam. Et compositum qualitative ex hiis, quod est compositio, vocant ignem, lapidem, vel aliquod tale. Et istam potēciam eternam, que nullam speciem corporis sibi determinat, 5 vocant materiam primam, fundamentum nature, vel, secundum grecos, ylen; et formam dicunt subsistentiam vel usiasim; compositum vero ex hiis vocant super- stans. Quarum quolibet differt a reliqua, et omnes ille sunt eadem singularis essentia; ut materia prima, 10 vel potēcia dicens relacionem ad formam vel actum, est primum horum trium, ex quo procedit actus, cum claudit contradiccionem quod talis materialis potēcia sit sine forma vel actu, sicut econtra claudit contradiccionem aliquam formam corpoream fore sine ma- 15 teria; et claudit contradiccionem illa duo reponi, nisi sequatur ex hiis compositio vel compositum, quorum trium quodlibet est eadem essentia singularis vel essentia corporea.

Unde, inter alias occupationes varias quas habui, 20 doleo de solitudine mea superflua, ymaginando formam et materiam esse absolutas res quarum utramque positionem existere per se, et ex illis coextensis resultare unum ad aliqualem motum quo duo liquida ymaginantur ad invicem commisceri. Et illis superad- 25 didi accidēcia, tanquam res abstractas que possunt per se existere; sed procul a me ista posicio! Quolibet ergo talis substantia, vel corporea essentia, est trina, et per consequens non ultimum singulare, cum sit multorum singulorum, scilicet materia et forma et 30 earum connexio ad invicem, que vocatur complementum, compositio, vel quietacio aut finis intrinsecus.

Sed diversimode locuti sunt philosophi in illa materia; ut Plato voluit | concedere eandem materiam vel B¹⁴¹* essentiam quam appellavit hylen, tenebram, vel caos, 35 nunc fore ignem, nunc aerem, et sic de ceteris elementis ac mixtis; quia in nulla accione nature superadditur negativa essentia absoluta 2^m totum, eo quod generacio esset tunc creacio, et corruptio esset annihilacio. Et est sententia huius viri satis bona 40 sicut et sententia philosophorum ponēnciam latēnciam

7. ypostasim in full pro ylen B.
24. motu B.

21. ydo B.

23. potēcia B.

formarum, negantium generacionem esse in corporibus, sed solum alteracionem.

Sed sermo Aristotelis est michi placencior, quia materia est eterna cum illa essentia, sed forma et compositum simul inceperunt. Et sic salvatur generacio substance, et tollitur annihilacio cum creacione forme extense.

Sed contra illud tripliciter argumentatur: primo per hoc quod cuiuslibet corporis materia et forma sunt partes integrantes, et per consequens non ista tria sunt eadem essentia singularis, cum totum sit perfectius quam aliquod elementorum suorum. Similiter, expositive sequitur quod quilibet talis substantia generata fuit eterna a parte ante, creata in principio instanti temporis, eo quod tam essentia quam materia, que est idem corpus, sic se habent; et ex alio latere sequitur quod tam essentia illa quam materia sunt naturaliter generabiles et corruptibiles; quia tam forma quam compositum est corruptibile, et utrumque illorum est essentia illa: ergo, illa essentia est corruptibilis. Similiter, iuxta illud sequitur quod generabile est ingenerabile, corruptibile incorruptibile, sive sensibile insensibile, calidum non calidum; et sic de quotlibet oppositis predicatis. Nam illa essentia est ingenerabilis, incorruptibilis est, et generabile, et corruptibile; quia illud compositum quod incepit esse per quantumlibet; quia tempus post illam essentiam; et alias corrumperetur, illa essentia manente. Et conformiter patet (cum ignis sit calidus, et materia prima eius non calida), si essentia eadem sit utrumque, tunc calidum est non calidum: et sic de aliis oppositis.

Quantum ad primum dicitur quod prima consequentia non valet, sed bene sequitur quod illa tria differunt ab invicem; quod verum est. Sicut igitur pars quantitative differt a suo toto, tam quo ad singularem essentiam quam quo ad suppositum (sed pars quantitativa est simultanea); sic pars qualitativa mediat in hoc, sed differet a suo toto, sed est eadem essentia.

Differt autem iste modus trinitatis a trinitate anime et a trinitate que Deus est, specialiter in hiis tribus.

but I prefer Aristotle's, stating that matter is eternal, but that form and compound began

simultaneously.

Three arguments *contra*.

I. Matter and form are parts; they cannot therefore be the whole.

II. On one hand everything is eternal,

if matter is so,

for it is

identical with

the rest;

or on the

other, on

account of this

identity, matter

is corruptible.

III. And we

have all sorts

of

contradictions

together, if the

same essence

is matter, form

and compound.

Answers 1.

Matter and

form merely

differ among

themselves, and

from the whole

as an integral

part, which is

the same

essence as

the whole.

This is a sort

of trinity;

but the

distinction

4. f3 B.

14. app^a B; pū^a B.

33. unde *pro* sed bene B.

37. finit^{am} B.

between it and
that of our
soul or of God
is threefold.

1. Matter is
eternal; form
and compound
exist in time;
whereas in the
other Trinities
all three must
coexist.

2. In God
nothing, in the
soul, no agent
but God, has
an external
influence on
the emanation
of one from the
other; while
for bodily
things it is
otherwise.

As for those
who say that
matter and
form, essence
and body, can
be separated,
and that

combination is
a mere
accident, let
them enjoy
their discovery.

3. Form is
more perfect
than matter,
and the

compound than
either; whereas
in the other
trinities, all
three are

equally perfect.

II. We deny
the conclusion;

logical
sequence is
wanting, there
being four
terms to the
syllogism.

Nor does it
either follow
that matter is
generable or
corruptible.

Of what
species then is
this essence?
Sometimes of
one, and
sometimes of
another;

Primo, in hoc quod claudit contradiccionem aliquod
suppositum illius trinitatis esse non coevum cum quo-
libet eorum. Sed hic primum est eternum, et utrumque
2^{orum} coevum et corruptibile. 2^o in hoc quod primum
suppositum per se est, producit continue 2^m; et illa 5
ambo tertium ad intra, sine aliquo cum producente
alio in Deo, et sine aliquo preter Deum a producente
in anima. Sed primum suppositum in trinitate corporea
est potencia susceptiva, non potens actuari sine ex-
trinseco efficiente; sed illis positus, sequitur | 2^m forma- B 141^b
liter de natura rei. Qui autem dicunt quod forma
potest exui a materia per se, siccud essencia a corpore,
dicunt quod compositio est accidens utrique composi-
torum, cum forma prius creatur quam producitur a
natura 2^a. Sed gaudeant illi de invencionibus suis, 15
quia puto me scire quod nunquam probabunt ma-
teriam vel formam esse res distinctas ab essencia que
est illa 3^a. 3^o in hoc differt illa trinitas ab aliis supra-
dictis, quod in ista 2^a res est perfeccior, quam 1^a et
eius finis; et 3^a est perfeccior quam priores, cum sit 20
finis eorum et sic reciproce causant se in diversis ge-
neribus causandi. In trinitatibus vero prioribus tollitur
omnis accidentalitas unius ad aliud, omnis excellencia
in perfeccione vel bonitate vel accione ad extra, omnis
reciproca causacio, et inequalitas in aliquo attributo. 25
Ad 2^m argumentum negatur conclusio et aliud
argumentum factum ad probandum illam; siccud
non sequitur: hoc *esse* fuit eternum, et hoc *esse* est
ignem esse: igitur, hoc *esse* ignem fuit eternum.
Igneitas autem (et per consequens ignis) incepterunt 30
esse quando inceptit esse quod *hoc est ignis*. Et per
idem non sequitur quod materia illa vel natura gene-
ratur aut corrumpitur, quamvis illud compositum sic
se habet, et sic de syllogismo expositorio. Et si que-
ratur cuius speciei est illa essencia, dicitur quod nunc 35
est individuum unius speciei et nunc alterius; et tunc
individuum non potest sic mutari; ab essencia enim
procedit individuum, cum sit esse substancialie essencie,
ut essencia ut huiusmodi est in aliqua specie. Ideo
dicunt autores quod ipsa et materia non possunt de-40
monstrari, nec sunt quid, nec quantum, nec quale, nec

3. h' p'm B. 4. quid(!) B. 39. before essencia nec pro ut (?) B.

26. ad pro aliud B.

34. et B.

aliquid aliorum encium. Plato tamen demonstravit illam, quod illa nunc est individuum unius speciei, et nunc alterius, quod est verum. Nec sequitur ex hoc quod ignis erit aqua: et sic de ceteris.

as Plato says. But this does not prove that one element will be another.

5 Et istis est quodammodo simile illud quod antiqui sapientes theologi dicunt de incarnatione Christi, ponentes quod due nature sunt unum suppositum, sicut una natura est 3^a supposita; et illarum naturarum una est eterna (ut divinitas) et alia temporalis (ut
10 humanitas). Nec sequitur verum incepisse esse, desiisse, vel factum defuisse, etsi illa natura *que est* verbum sic se habet. Conceditur tamen quod ille homo qui est verbum, est tempore creatura factus, minor patre; et sic de quibuscumque *que* conveniunt illi humani-
15 tati. Et cum verbum sit illa humanitas, ipsum est unum factum, una creatura; et sic de ceteris predi-
B 142^a catis per se substantivatis, et non de predicatis | temporalibus substantivatis signo proprio verbi. Et sic deitas est homo, sed non humanitas; sic verbum as-
20 sumpsit hominem, quia humanitatem, sed non personam. Christus tamen, qui est persona, est vere assumptus, sicut allibi diffuse declaravi. Non ergo sequitur: *illa essentia est generabile et corruptibile naturaliter*: ergo, *sic generabilis et corruptibilis*. Nam essentia significat
25 absolute, ante eius genus, rem integram, sed natura significat concrete materiam vel formam, vel 3^o, integram essentiam esse hic vel illud in speciali.

The Incarnation is a case in point: Christ is two natures, and one person;

The Word did not begin, nor end; yet the nature *which is* the Word did. The Man who is the Word is a creature, and thus the Word is in this sense a creature too. Deity is man, but it is not humanity, for the Word did not take upon himself the person of man.

Ad 3^m, patet ex supradictis quomodo unum oppositorum predicatur de reliquo, et quomodo non. Nota
30 tamen quod materia prima nec est calida nec est frigida; et sic de aliis denominationibus accidentalibus, quamvis sit subiectum remotum huiusmodi qualitatum. Omnis namque qualitas est forma qua subiectum est formaliter accidentaliter quale; et sic est subiectum

III. We have already pointed out how contraries can be predicated of the same. But primordial matter is properly neither hot or cold, &c.; qualities are accidents

18. videtur (?) *pro* verbi B. 20. pam B. 21. pa B. 24. non
tamen (?) *pro* nam B. 25. ems B. 26, 27. in tege B.

3. *Nec sequitur*. Wyclif's position will perhaps be clearer, if we state it in modern terms. The same essence that is now a mere mixture of oxygen and hydrogen, will be water; but it does not follow that water is a mere mixture of oxygen and hydrogen. Admit (as some chemists do) that there is only one primordial element, and Wyclif's assertion can extend to everything.

belonging to substantial form; so matter is not directly their subject.

They cannot exist by themselves; for there are bad qualities, which then would be created by a bad Principle.

Light is the fact that a seeing subject can see a visible thing by means of something luminous and is either reflected or transmitted.

It is inseparable from the luminous thing; and I was once in error when I believed that light could pass from one subject to another.

Heat is the being hot of a subject; but hot has different meanings. 1st Having a natural property to create the feeling of heat and disaggregate bodies: as fire. 2nd. Having this property only imparted and not natural; as a body in which there is much fire.

The two preceding are formally hot. If a body not hot itself, produces heat from a distance (as the sun)

esse quale, et non res que potest per se esse. Nam universaliter infirmitas, vicium et talia ponuntur qualitates; que si per se essent, haberent deum malum causam eorum. Ideo omnis qualitas, quantumcunque realis, ponit subiectum esse quale accidentaliter, sine 5 pluri preter illa que consecuntur ad hoc: ut lumen potest esse *subiectum capax esse dispositum ad videndum visibile per aspectum luminosi*; et illa dispositio vocatur lumen, sive sufficiat ostendere se ipsum distincte (ut dispositio in mixto terminato, que vocatur lumen re- 10 flexum); sive sufficiat confuse ostendere se et suum subiectum; ut dispositio in medio dyaphano ad ostendendum visibile extra medium, sicut que dicuntur species lucis, que lumen dicitur, vel species illud que similando coloris appellatur. Lux autem est forma sub- 15 stancialis in per se lucido, vel accidens inseparabile, cum in aliis sit accidens, et *lucere* est eius actus, et fervor est terminus in quo quietatur. Unde videtur michi quod illa que quondam credidi de migracione luminis et de eius realitate sunt impossibilia. Stat ta- 20 men luminosum applicari medio et non illuminare illud, vel per indisposicionem luminosi vel medii suscipientis vel medii intercepti.

Et sic caliditas est *subiectum esse calidum*. Hoc tamen intelligendum est equivoce; ut ignis est calidus 25 2^m naturalem proprietatem, cum ex iuxtaposicione et situ atthomorum vel incognitam habet efficaciam immutandi tactum, calefaciendo et disgregando. Et ex talibus modis miscendi atthoma habent lapides terre, nascencia et alia mixta specificas sufficiencias, virtutes, 30 vel potencias occultas, que qualitates dicuntur. Sed secundo dicitur aliquid participative calidum, de quanto est mutativum tactus, ut mixtum igneum, quod non oportet ad omnem punctum habere ignem, sed sufficit quod spissius habeat quam sensus sufficit discernere: 35 ut est aer eque calidus ut ignis; nec ignis natus est plus calefacere | aerem naturalem, cum deficit sibi B 142^b capacitas. Omnia igitur que sic sunt calida, dicuntur formaliter calida a caliditate in actu. Alia autem sunt efficienter aut virtualiter calida que habent efficaciam 40 calefaciendi a remotis, et tamen non immutarent

10, 11. refluxum B.

27. 1st B; *ib.* 198^a B.

32. aliud B.

35. ffous B.

tactum calefaciendo, etsi tangantur: ut sol et alia
 astra. Sed potencia, virtus et sufficiencia a qua cale-
 faciunt, non vocantur caliditas, sed una qualitas super-
 eminencior. 3^o modo dicuntur aliqua calida quo ad
 5 efficaciam quam habent calefaciendo corpus animalis.
 Et hoc dupliciter; vel ut sunt immutativa gustus, ut
 piper, galanga, et alie species: que certe calefactive
 immutant gustum et non tactum; vel ut sunt mutativa
 complexionis 2^m humores generatos ex illis; ut unum
 10 dicitur apud medicos calidum et siccum, quamvis tactui
 sit frigidum et humidum. Et conformes sunt divisiones
 de frigido, et humido, et sicco. Ex quibus patet quod
 stat equivocando in denominationibus calidum esse
 frigidum, humidum et siccum; et unum reliquo calidius
 15 tot modis potest dici, quot modis dicitur calidum.

Notetur ergo denominacio univoca subiecti, et
 videatur quante distant lateraliter gradus denomi-
 nationis a non gradu; et penes hoc mensuretur intensio
 qualitatis; et penes intensiorem qualitatis mensuretur
 20 intensio corporis simplicis, ipsum primo subiectantis.
 Et in mixto habente qualitates contrarias, oportet
 notare excessum dictum unius qualitatis supra alia, ut
 quidam asserunt; et penes illum excessum in com-
 paracione ad subiectum primum, attenditur mixti intensio.
 25 Et quo ad velocitatem notant latitudinem qualitatis
 acquisite vel deperdite 2^m se totum subiecto suo toto
 primo; et penes illam in comparacione ad tempus
 attenditur velocitas alteracionis. Et illi dicunt quod,
 sicut non omne corpus est eque longum vel latum,
 30 sicut aliqua eius pars; sic nec qualitas quo ad eius
 extensionem. Et sicut pars qualitatis est disposicioni
 ad operandum proportionaliter ad eius magnitudinem
 quam totum in comparacione ad eius magnitudinem,
 sic pars qualitatis est suo toto intensior. In aliquibus
 35 tamen formis difformibus non oportet partem excedere
 suum totum; quia tanta est accucies lancee, quanta
 est acucies sui cuspdis; et sic est de motu et aliis que
 non habent formas positivas vel privativas inpedientes,
 accidentes denominare suum subiectum remotum eque
 40 intense sicut suum subiectum primum.

this is not
 heat, but a
 superior
 quality.
 3rd Having the
 power to
 produce heat in
 the animal
 body; either in
 the taste (as
 pepper and
 ginger), or in
 the internal
 humours, as
 certain
 medicines.

*Cold, Wet and
 Dry* have
 similar
 meanings.

We must in
 researches
 keep to the
 same meaning,
 when alteration
 occurs, and see
 by how much
 one degree of a
 quality exceeds
 another of the
 same.
 Some say that
 in compounds
 we should note
 the excess of
 one quality
 over another.
 As for velocity,
 they note the
 time and the
 extent of the
 quality gained
 or lost.
 They say that
 qualities differ
 in extent, so
 that the more
 extended the
 subject, the
 greater the
 quality in
 proportion to
 its intensity in
 each part:
 with certain
 exceptions.

1. tangatur B. 12. f'udo B. 17. latior B. 18. intencio and so
 on B. 21. habentes B. 38. p'uatinas B.

But I think
that the
quality of the
whole always
depends on
that of each
part;

so that each
smallest
possible part
has a
certain degree
of quality,
which is
inextended,
belonging
entirely to the
whole and
partially to
each part.

Qualities may
vary in their
manner of
action, so that
for some
purposes heat
in iron is more
active than in
fire, &c.

Aristotle's
position, that
the four
elements result
from the
combinations of
the four
qualities, is
quite right,
for there is no
contradiction
among these
qualities, thus
combined.

Sed michi videtur probabile quod generaliter omne difformiter qualificatum, vel intensum quo ad subiectum, est tantum intensum sicut aliqua eius pars quantitativa usque ad minimam partem cui gradus secundum molem indivisibilis correspondet. Et sic | mixta dicuntur B 143^a calida, frigida, vel humida, vel sicca, equivoce quodammodo respectu simplicium; cum qualitates ille remisse resultant ex mixtione simplicium ex quibus resultant, Et minimum naturale habet unam qualitatem 2^{am} mole indivisibilem; quia per subiectum 10 multiplicatam. Et nulla pars eius est adequatum subiectum huius qualitatis. Et sic videtur caliditas ignis, que est in genere suo intensior caliditate aeris que est disparis speciei; sicut siccitas terre in genere suo est intensior frigiditate terre. Manet autem in transicione 15 subiectorum illud genus propinquum qualitatum huiusmodi, et idem secundum subiectum essencie extra genus, non autem secundum idem individuum substance. Et sic, ratione raritatis aut densitatis, est unum elementum disposicius converti in sibi proximum quam in aliquid 20 plus remotum.

Nota eciam quod qualitates, tam prime quam secunde, suscipiunt multas denominationes 2^m manieres accionum: ut calor in ferro est in aliquo activior calore ignis puri. In aliis autem calor humidi ignei; et sic 25 de aliis qualitatibus, vocatis vulgariter primis, sicut mixta imperfecta vocantur communiter elementa. Nec peccat suasio Aristotelis quod sunt quatuor elementa secundum combinaciones 4 qualitatum. Sufficit enim quod iste 4^{or} coniungaciones non aut contrarie, sed 30 omnes alie coniungaciones qualitatum primarum faciunt contrarie. Ideo solummodo insunt in mixtis; nec attenditur proportionalitate absolute penes intensionem vel multiplicacionem huiusmodi qualitatum respectu passi, quam proporcionem motus alteracionis consequitur, 35 sed penes sufficienciam huiusmodi qualitatum ex disposicione subiecti, ex influencia et aspectu celi, cum

14. frigiditati B.

15. ^{one}trune fiblor^e B.

28. It ought to be rather: *6 qualitatum*; or, if we do not admit the negative qualities, *3 qualitatum*. Thus: *Earth*: heavy, dry, and cold. *Water*: heavy, moist, and cold. *Air*: light, dry, and cold. *Fire*: light, dry, and hot. Perhaps 4 should be read as grammatically belonging to *combinaciones*.

similibus actuantibus accionem propter proporcionem
voco ydoneitatem ad agendum. Et sic potest eadem
qualitas dici intensiva quo ad denominationes et ac-
ciones multiplices.

5 Nec obest idem inanimatum alterari per tempus,
cum essentia manet continue in quocunque minucias
sic divisa, et mixtum (quod est illa essentia alterata)
licet quodlibet eius indivisibilia corrumpuntur; quia
pars illius mixti que remanet secundum disparem mix-
10 tionem recipit quotlibet qualitates 2^{as}; et illud mixtum
alteratur 2^m partem. Et quandoque manet essentia
composicione [ut in] fumo, igne, aqua, terra, et aere;
quandoque non manet, illa divisa. Et sic simplicia
mixta possunt variare mixtionis gradus, stante eadem
15 forma, quia aliter non haberet mixtum permanenciam
agendo vel paciendo.

Unde, pro leviori locutione in illa materia, notandum,
secundum modum loquendi Platonis et scripture,
quod essencie possunt accipere denominationes 2^m
20 species diversas. Et sic concedi potest quod ignis est
B 14^{3b} aqua, terra, et sic de quotlibet speciebus. Vel | si
peripateticus ob favorem Aristotelis hoc negaverit, tunc
potest primo supponi totum esse suas partes. 2^o quod
omnia, preterita vel futura, sunt. Et 3^o, quod qui-
25 cunque numerus corporum sit corpus. Quibus sup-
positis, potest dici quod corpus successivum, ex parti-
bus vicissim generatis compositum, alteratur et recipit
quantumlibet disparem denominationes 2^m partes huius-
modi, licet non sit aliqua earumdem. Ut, ponente
30 quod aggregatum, ex corporibus quantumlibet disparium
specierum successive generatum, apponatur combustioni,
tunc illud corpus successivum durat in calefaccione
aut combustionem in casu per quotlibet annos. Sic enim
dicit Aristoteles ignem crescere per appositionem com-
35 bustibilium infinite. Et ita secundum polliticos manet
idem collectivum, et eadem aqua mediterranea; et 2^m
Aristotelem idem manere eternum, que diversimode in

An inanimate
thing may
continue the
same, yet
altered to a
certain extent,
because its
essence
remains.
Sometimes the
essence of each
element
remains
in combination,
sometimes
separate
and there may
be various
degrees of
composition.

We may, in
this matter,
follow Plato
and Scripture,
and say that
fire is water,
earth, &c.
Or, not to
contradict
Aristotle, note
that the whole
is its parts;
that what *is*
past or future,
is; and that
a collection of
bodies is a
body.
If so, a body
composed of
different
successive
parts
can receive
different
qualities, and
remain the
same; thus a
succession of
combustibles
burned is one
body that can
continue
burning for
years, the
Mediterranean
changes and
remains the
same sea,

12. ut in *deest*; ignis fumus; *ib.* aer B. 14. mixtionis B.

2. *Ad agendum.* Some words are evidently wanting here.
5. *Inanimatum.* This paragraph deals with the difficulty of
reconciling identity with change in non living things. The iden-
tity of the soul, or form, as Wyclif has above pointed out,
obviates this difficulty for living things.

and things that
are altered in
their parts
remain one
eternal being.
Yet I do not
see that this
can apply to
the
denominations
of *small* and
big.

We can say
that a man is
white, but not
that he is big,
because his
face is so.

Neither
matter nor
form is hot
(calida), but
that both the
primitive
essence and the
ultimate
compound is
that *which is*
hot (calidum).
If it were
possible for
heat to exist by
itself as a
form, it would
indeed be hot;
but this is
impossible.
A difficulty:
how, if fire-
ness can be
either present
or absent from
a given body,
can it be a
substantial
form?

Every
substantial
form is
accidental
as concerns
primordial
matter, but it is
itself a
substance.
The substantial
form is what
primarily

suis partibus alterantur. Non tamen video quod idem corpus stet simul quantumlibet parvum et magnum diversificari, sicut est simul 2^m partes dispariter qualificatum; quia quantificacio respicit totalitatem sicut parvificacionem uniformitas; et sic de aliis multis, de 5 quibus non sequitur: *hoc est uniforme magnum vel parvum* (et sic de ceteris denominacionibus conditionatis) 2^m *partem: ergo hoc est similiter huiusmodi*. Sed de qualitatibus denominacionibus, concedimus hominem esse album, quia secundum partem, ut faciem. Sed 10 tamen negamus hominem esse sic parvum vel magnum ut facies; quarum denominacionum distinctionem relinquo posteris.

Redeundo igitur ad proposicionem dicitur quod nec materia prima nec forma est calida, sed tam essencia 15 quam compositum ex materia et forma est calidum, sicut compositum per se generatur et corrumpitur; quia taliter eadem oportet habere, tam materiam secundum quam subiectat calorem, quam formam quam consequitur calor, a qua est subiectum calefactum. Et 20 si dicatur quod calor per se existens foret calidus et calefactivus; ergo, non oportet calidum dicere tam materiam quam formam tamquam eius principium: hic dicitur quod claudit contradiccione[m] caliditatem esse sine subiecto: ideo, si sic esset, tunc calefaceret et non 25 calefaceret; et econtra, quidquid volueris habere. Sed conceditur calorem vel caliditatem esse calidum, sicut quantitas quantum. Sed tunc supponit terminus concretus similiter, ut patet allibi.

Uterius queritur quomodo igneitas (et sic de qua- 30 libet forma substanciali extensa) non sit accidens, cum denominat illam essenciam accidentaliter formatam, eo quod talis forma potest sibi advenire et abesse preter eius corrupcionem. Huic dicitur quod omnis forma substancialis est accidens materie prime et illi essencie, 35 sicut et humanitas est accidens verbo; utrumque tamen est in se substancia, licet diversimode, et per consequens nulli inherens. Sed nulla essencia, sub ratione qua essencia, dicit vel genus vel speciem substancie, cum oporteat | hoc fieri per substancialem substancie B 144^a

2. sit B. 3. dim'fi' B. 4. ^mtolitātē B. 5. ^mpuifi^o B. 6. unifor^m B.
7. 8. ^mtolit^e B. 16. a31^m (!) B. 14. Reddendo B. 26. frige^mfaceret B.

qualitatem, ut igneitatem, vel lapideitatem. Unde, per hoc quod est ignis, est species substantie; quia non est dare aliquam substantiam, speciem, vel qualitatem substantie prius inexistentem illi essencie cui accideret igneitas. Sed illa est prior quam caliditas, levitas, siccitas, vel aliud accidens in communi. Ideo est substantia faciens subiectum aliud, et non aliquantum, vel aliqualem, vel alicuiusmodi formaliter. Ideo, quicumque forma prius naturaliter inexistit illi essencie, est substantialis forma; et alie naturaliter consequentes sunt accidentia. Omne ergo formale quod nulli subiecto accidit, nisi materie prime, est substantiale; et composito ex tali et materia accidunt accidentia tantquam substantie alicuius certe speciei. Unde 2^m grammaticos, *esse* vel essencia dicit substantiam meram, modo quo pronomina et verba substantiva substantiam meram significant. Sed quilibet terminus in genere per se supperaddit qualitatem propriam vel convenientem.

20 Sed adhuc obicitur de induccione forme elementaris, quomodo qualitates prime inducuntur, et tam dispariter consequuntur formas elementares, nec non et [quomodo] elementa sunt tam dispariter activa. Sed pro isto dicitur quod elementa, sicut et omnia corpora, 25 habent certas regulas agendi et quomodolibet aliter se habendi, limitatas sibi a natura: ut ignis, sicut est purissimum et perfectissimum elementum, sic est maxime activum, et minime violenter susceptivum peregrine impressionis; ut non putrescit, non fit humidus aut frigidus, sicut cetera elementa extranee disponuntur; ut terra humescit et calefit; aqua calefit et siccatur, vel saltem induratur per congelacionem; aer frigescit et putrescit, sicut duo elementa inferiora. Omnia tamen illa sunt per improprias mixtiones corporum 30 extraneorum, dum oportet vel quo ad sensum totum esse elementum.

Sed dubitatur an aer sit frigidus, vel exalacio inmixta; aqua, calida, vel igneum inmixtum; terra humida, vel aqueum imbibitum; et sic de mixtis, habentibus 40 elementa talia. Admodum probabile autem est quod terrea mixta imperfecta agregata sunt talia, et non

classifies a being in its proper species: for we can conceive nothing substantial or qualitative prior to fireness in a body; and it is itself prior to everything else.

Every form that determines only primordial matter, is substantial; all others are accidents. *Being* denotes the substance; generic terms add qualities.

Difficulties about the great variety of qualities that proceed from the same elementary forms. We answer that each element has its own natural law of activity. This is seen best in fire, the purest of all: it neither rots nor is moist nor cold, which is contrary to its nature; earth may be moist and warm, &c. only because it is not pure. And so of the other elements. It is extremely probable that if water is hot, it

owes it to fiery
particles
present; &c.
How could
contrary
qualities
coexist (v. g.
cold and heat
in water)?
Thus heat in
earth or water
is a violent
state; and we
have
proofs that
such a state
implies much
activity,
because of the
tendency to
return to the
natural state.
Yet the same
element, in
different
circumstances,
does not act
in the same
way;
fire acting on
water
produces,
not fire, but
vapour, and
then takes its
proper form.

Thus the
elements are
said to
have less
of their
essential
qualities, when
in reality they
are not
elements but
combinations
with contrary
qualities.

The arguments
which assert
that in this
case one

pura elementa. Non enim est possibile quod contraria
sint extensa, sed dum unum elementum agit in reli-
quum, subito generantur et corrumpuntur atthoma 2^m
totas quantitates et formas substanciales; et cum idem
quod dat formale dat tamen hoc correspondenter 5
quantum debitum est de loco, nisi inpediatur; hinc
apparet sensui erranti terreum vel aquum per tantum
esse calidum, cum violentum est activius in agendo
quam foret, ipso non violento; sicut patet per multa
experimenta, quibus scitur violentum vigorosius redu- 10
cere se ad dispositionem | naturalem, quam sufficit B 144^b
non violentatum agere. Agit tamen in virtute supe-
rioris regulantis. Et ideo non mirum si dispariter
agat cum disparibus circumstanciis. Apparent ergo
nobis qualitates esse per totum, cum tamen non sit 15
ita. Unde ignis, agendo in terreum vel aqueum, non
immediate producit ignem, sed resolvit materiam in
vapores vel fumos, et sic subtiliat ad aerem; et de-
mum inducit formam ignis. Non quidem est possibile
quod forma substancialis sit reliqua remissior 2^m partes 20
eius intensivas, cum substancia non suscipit maius aut
minus; sed partibiliter inducitur quo ad subiectum.
Et subito consecuntur qualitates nove in toto formas
novas, cum impossibile sit qualitatem ultimam singu-
larem in utroque elementorum manere symbolorum 25
parcialem; ergo commixtione contrariorum dicuntur
elementa remissa, dum talia sunt mixta imperfecta, et
non elementa. Et sic per rarefactionem disponitur
materia ut sit sub forma aeris vel ignis; et econtra per
condensationem, ut sit sub forma aque vel terre, et 30
hoc frigus, constipans aerem, generat ex eo aquam;
sicut econtra calidum rarefaciens aut resolvens in fu-
mos aut vapores, generat aerem aut ignem. Non
tamen scio quod ex aliquo tali elemento immediate
generatur terra, sed ex commixto, quod est terreum 35
admodum.

Et argumenta que arguunt in ista materia quod unum
elementum consumeret reliquum, quod calidum inducit
per totum frigidum, caliditate remissa (et sic de aliis)

4. idem B.

5. formi *very illegible* B; ib. 177 B.

7. tam B.

14. Oportet B.

23. non (l) B.

26. fymblore p^lal^m B.34. im^{te} B.

36. admd B.

omnia supponunt elementa agere sine regula limitante, et continue unum durancius tollere de suo subtriplo, et reliquum se habere, ut oportet, [ad] sensum; ratio tamen contradicit talibus ymaginibus. Probabile tamen
 5 est quod elementa possunt taliter misceri in mixto, quod nunquam unum aget in reliquum; ymmo quod anima sufficiat elevare corpus suum quantumlibet celeriter; et omnia corpora mundi fiunt incorporalia, propter novum modum componendi illa ex atthomis,
 10 et cessationem motus celi. Quis, queso, philosophus scit virtutes corporum quas possunt habere ex diversis mixtionibus et diversis formis, que adhuc latent in visceribus nature incognite?

Consimiliter ymaginandum est quod elementa, unita
 15 debito modo, constituunt fumos ac vapores; et illi grossati, tanquam mixta imperfecta, constituunt mixta grossiora, ut sulfur et argentum vivum, que principiant lapides et metalla secundum dispares gradus humidi, exalacionem terrestrem, et vaporem aqueum. Quod si
 20 aer et ignis habundancius participant in mixtis imperfectis, principiant vegetabilia et sensibilia, secundum quotlibet gradus. Unde, inter sensibilia animata et
 B 145^a inanimata, sunt quedam de quibus | dubitatur utrum nutriuntur vel non; ut fungus terre inter vegetabilia.
 25 Et sensibilia sunt quedam de quibus dubitatur, utrum habent motum dilacionis vel constriccionis a sensu; ut spongia marina. Et sic mediant inter rationalia et irracionalia illis minus perfecta. In omnibus ergo procedit natura ordinate, tam quo ad modum miscendi
 30 ex elementis et mixtis, ut resultet forma superaddita cum suis qualitatibus 2^{is}, quam quo ad modum durandi et recipiendi influenciam a celo; et breviter quomodocumque naturaliter se habendi.

Et conformiter ymaginandum est de generibus for-
 35 marum substancialium: ut infima est forma elementaris, et proxima forma inanimati mixti, post quam forma vegetabilis, 4^o forma bruti, et 5^o anima hominis. Et in quotlibet istorum sunt multi gradus, 2^m quod plus vel minus recedunt ab extensione. Nam anima hominis
 40 creatur a deo, et est multiplicata per totum hominem

3. ad *deest* B.
 24. untr'ut' B.

8. sunt B.

16. 9^o ffati B.

20. pti^{tes} B.

24. *Fungus terre*. May not this be the truffle?

Man's soul is
immaterial:
that of the
higher animals,
indivisible
but dependent
upon matter.

Each superior
form includes
those inferior
to it.

As for the
forms of the
Annulosa, they
are, as above
mentioned,
extended in a
certain sense,
but not
infinitesimally
so; the parts
cut must have
a certain size.

They act
together as the
souls of men
of whom the
body is double
above the
waist.

I leave a
deeper
examination
of this to the
learned, but
beg those who
read not
to condemn me,
because I do
not agree with
modern
theories,
but strive to
reconcile the
dicta of the
ancients with
reason.

incorporalis, cum eius propria operacio non dependet
a corpore. Forme vero brutorum perfectorum sunt
indivisibiles, multiplicatae per totum, sed requirunt cor-
pus organicum ad suum *esse*, sicut non habent opera-
cionem independentem ab organo corporali. Verumtamen 5
omnis anima multiplicata est cognitiva communis multi-
plicati ut transcendentis et communium accidentium. Sed
non est possibile animam distincte cognoscere sub-
stanciam rationalem sub ratione substancie, nec animam
multiplicatam et separabilem substantialiter a corpore 10
sibi accidente. Et semper forma superior continet in-
feriorem; ut anima presupponit formas elementorum
et formas superadditas in partibus sui subiecti. Im-
possibile tamen est quod forme diversarum specierum
actuent primo eandem materiam, vel sint proximo per 15
eandem materiam adequate. Forme vero anulosorum
sunt quodammodo extense, modo quo dictum est su-
perius, sed solum finite in uno animali, cum una forma
requirit certam multitudinem materie, recte dispositam
ad cuiusquemlibet punctum esse illam. Et sic com- 20
municant in actuando, sicut anime hominum habencium
duo corda et ceteras partes geminatas supra diafragma,
et sub diafragmate solum membra qualia convenirent
uni homini.

Sed de omnibus istis relinquens subtilibus logicis et 25
naturalibus profundum scrutinium, rogo perlegentes
illud capitulum non condempnare vel deridere hec dicta
tanquam [in]probabiliter opiniata. Scio enim quod mul-
tis autoribus discrepant, et argumenta calculancium
interimunt multas opiniones et multas ymaginaciones 30
modernorum. In omni namque veritatis examine pre-
cellit ratio, cum auctores trahendi sunt ad concor-
danciam rationis iuvamine, non e contra. Nam non
dubium quin ratio docuit Aristotelem, Platonem, Par-
menidem et Democritum, vel quemcunque alium ho- 35
minem, quidquid invenerit veritatis.

1. *īcor*^t B.6. *guus* B.7. *ūū^u B; ib. guū^u B.*15. *p'o* B.20. *ce ce* (?) B.28. *in deest* B.30. *it'ūū^u B.*33. *libacē pro iu-**vamine* B.

CAPITULUM DECIMUM.

Sequitur iam ultimo de proposicionibus temporalibus tractandum. Cuiusmodi sunt yppothetice adverbii temporis copulate, cum correspondenti actu anime | ;
 B 145^b ut sunt tales: *Sors est quando Plato est, priusquam Plato est; postquam ipse est, fuit* etc. Istarum autem propositionum veritates, quantitates et qualitates, cognoscende sunt sicut proprietates localium. Idem enim est dicere *Sor est quando Plato est* et dicere quod *Sors*
 10 *est in tempore vel in instanti in quo Plato est.* Of temporal propositions. They are such as are joined by an adverb of time representing a similar act of the mind: *A is when B is.* They are similar to local propositions.

Unde sophiste concedunt quo *omne quod fuit, est*; et sic de *fore*; quia in magno tempore eterno. Et sic sciunt dicere quandocunque talia fuerunt, sed nulla pro precisa mensura, sicut tamen limitatur in com-
 15 muni modo loquendi. Nec sequitur: *Ego scio ubi vel quando adequate hoc est: ergo sum ibi vel tunc*; sicut non sequitur: *Ego video vel non video locum in quo Sor est: ergo, sum ibi. Scio quod chymera non est: ergo, scio chymeram que non est.* In omnibus enim
 20 talibus tenetur terminus subiectus 2^o verbo infinite, ita quod actus prioris verbi denotetur cadere super conclusionem, ut sit ille sensus exemplorum: *Scio de aliquo loco vel quando quod hoc est ibi, vel tunc Sors est; video de aliquo loco quod in illo est Sors; scio de*
 25 *aliqua chymera quod illa non est.* Et sic de similibus. Non enim oportet omne scitum vel cognitum esse ubicunque quodlibet sciens ipsum vel cognoscens, sicut nec oportet quodlibet signatum esse ubicunque suum signum est, sed sufficit quod sit ubilibet. Nam,
 30 iuxta sic opinantes, quidlibet esset ubique commultiplicatum cum Deo, qui ubique scit de quolibet quod

According to sophists, All that was and that will be, *is*; i. e. in eternity; so they know when anything is, but not exactly, according to the usual sense of *when*. To know when a thing takes place is not to be at that time. In such cases the meaning of the verbs *know*, &c. bears on the whole of the dependent proposition. Nor is it true that whatever is known is wherever the knower is, for then everything would be everywhere with God.

1. Cap. *deest*; blank space for initial S.
 18. ego B. 20. vocatur B. 22. exore B.

9. q3 pro quando B.

all distinction
of place would
disappear,
subject and
accident would
be motionless
everywhere.

This opinion
is therefore
inadmissible.

Three
arguments in
its favour:
1. All truth,
being in God,
who is
everywhere,
must also be
everywhere;
for even
negations and
assertions of
what does not
now exist,
exist in God.
Thus Christ's
humanity and
all substance
would really be
everywhere.
2. *That a man*
is, or moves,
has no
extension in
space, and
yet it must be
somewhere,
therefore it is
everywhere.

3. Wherever it
is true that
a man is, there
is a man; but
the first is true
everywhere;
therefore the
second too.

For God
knows all

ipsum est. et infinitas alias veritates; et per consequens nullus locus esset, cum confuse quelibet pars loci esset ubicunque alia esset, sed omne subiectum vel accidens esset immobile, quia esset ubique; cum tamen ex alio latere sequitur quod omne accidens acquisitum alicui sit acquisitum cuilibet subiecto, et sic quodlibet agens sufficit quantumlibet distanter agere, movendo omnem substantiam, mota substantia una, eo quod omnem motum vel materiam motus quam haberet aliqua substantia, haberet et quelibet. Ideo sic opinantes haberent 10 pessimum mundum. Non ergo est color in hoc dicto.

Sed argumentatur tripliciter quod omnis veritas sit ubique, primo per hoc quod negaciones et affirmaciones de *posse* preterito et futuro, sunt ubique per hoc quod sunt in Deo qui est ubique. Ergo multo magis affir- 15 maciones positive que sunt in Deo principalius, sunt ubique, sicut accidentia eukaristie conceduntur a theologis concomitanter multiplicari cum Cristo. Et multo magis humanitas Cristi esset ubique, et per idem omnis substantia, cum vere in illo sit, commultiplicatur 20 cum illo ubique. Et sic conversaretur in celo, ymmo a nullo distaret.

Similiter, *te esse* non est extensum, sicut nec *te moveri*; et est alicubi, ex hoc quod est. Ergo est multiplicatum vel punctale; et cum non sit ratio quare 25 alicubi multiplicatur, quin per idem ubique; ergo ubique. Et per idem omnis veritas est ubique. Assumptum patet ex hoc quod *te esse* per tempus abscisionis brachii | tui erit adequate ubi est residuum corporis B 146^a tui, et non movebitur ad illum locum: ergo nunc est ibi; 30 conformiter mota parte tui, et residuo quiescente ad omnem punctum tui, foret tam motus quam quies contraria, quia ibi foret ita: *et hoc movetur et quiescit*.

Similiter ubicunque est ita quod homo est, ibi homo est; sed ubique est ita quod homo est: ergo, 35 ubique homo est. Minor, ex hoc quod si hic non est ita quod homo est, hic falsum est esse ita quod homo est, et per consequens falsum est esse ita quod homo est, et sic non est verum quod homo est. Si ergo hic non est ita quod homo est, hic falsum est esse ita. Si 40

11. modum B. 16. *nc pro sunt* B. 20. sit (!) B. 28. ptg
abctio B. 36. h' B. 37. h' B. 39. h' B. 40. h' B.

ergo Deus ubique cognoscit omnem veritatem, tunc
 ubique cognoscitur et est cognita omnis veritas, et cum
esse cognitum sit res cognita, sequitur quod ubique sit
 omnis veritas res cognita. Si ergo negative veritates
 5 sunt in omni loco, cum quolibet affirmacio habeat
 suam rationem essendi in quocunque tali loco, sequitur
 quamlibet affirmationem esse ubique, sicut ubique
 causat relaciones et quotlibet alias veritates; et per
 consequens est ibi secundum efficaciam et conser-
 10 vacionem.

Ad istud dicitur quod tripliciter dicitur *esse alicubi*:
 primo, potencialiter, sicut rex dicitur ubique esse in
 regno, ubi est eius potencia, vel habitus agendi et
 disponendi. Secundo presencialiter; sicut rex ubique
 15 dicitur esse in aula sua presens, dum habet actualem
 noticiam ex sua presenciam que ibi sint, et ad omnem
 punctum illius cognoscitur esse presens. 3^o modo es-
 sencialiter quo ad locum in quo est adequate. Et
 michi videtur quod duo modi primi essendi alicubi
 20 sunt figurativi et negandi a loyco, si desit ibi modus
 essendi 3^o modo, quia tunc quidlibet esset ubique. Unde
 Deus potencialiter et presencialiter est ubique, quia
 essentialiter est ubique: quod cognoscitur ex hoc quod
 conservancia et causancia sua sint ubique, et difformes
 25 in diversis, sicut difformiter causat diversa: quod tan-
 tum sonat sicut hoc: conservancia vel causancia Dei est
 difformis: quod nullo modo potest esse, nisi causancia
 Dei esset alicubi et per idem ubique. Cum ergo se-
 quitur *hic causat Deus: ergo, hic est causans Deus*; et
 30 per consequens vel existens hic per essenciam, vel eius
 instrumentum medium causandi; patet, cum Deus im-
 mediate causat ad omnem punctum mundi, est ad
 omnem punctum mundi. Sol autem causat distanter
 ab illo per lumen vel aliam influenciam instrumentalem;
 35 ideo dicitur esse potencialiter ubi causat, et non essen-
 cialiter. Sed est ordo secundum quem prius causat
 lumen sibi propius quam lumen sibi distancius; sed
 est longe aliter de causacione Dei.

Ad primum argumentum audi vi 4 responsiones, qua-
 40 rum prima dicit quod tales veritates nullibi sunt, sed
 in Deo causaliter. 2^a dicit quod sunt in Deo et in

truth
 everywhere,
 and so all
 truth is
 everywhere.

To answer
 these, note
 that *to be
 somewhere*
 means either
 to be there by
 power
 (as a king
 throughout his
 kingdom)
 or by presence
 (as a king in
 his hall),
 or by essence,
 filling a certain
 place entirely.
 The first two
 are
 metaphysical,
 not real, and
 require the
 third; God is
 everywhere in
 all three
 senses, because
 his action in
 everywhere,
 and not the
 same
 everywhere.

God is
 everywhere the
 immediate
 cause of all;
 the sun,
 causing at a
 distance, acts
 potentially
 only.

To the 1st
 there are four
 replies.
 1. That such
 truths are in

12. pot^r B. 13. h3 = habet B. 17—18. ≠^r B. 21. quod pro
 quia B. 27. n B.

God only as in
their cause.

2. That they
are in God and
the world, but
in no part of
it.

3. That these
past and future
truths are only
where they
were or will be
true.

4. That they
are
everywhere;

which I think
probable.

For if we do
not distinguish
between the
meanings of
being
anywhere, and
take it to
signify any
sort of
causation, then
everything *is*
everywhere.
But we must
speak with the
many, and
think with the
few; so we
shall admit that
only *filling up*
a certain space
is *being* in that
space.

So Christ's
humanity is
not

everywhere,
though *that*
which is

His humanity
(the Word) is
so.

Nor is the
quantity, &c. of
Christ's Body
in the
Eucharist; yet
the body is not
without size.

Some
admit that

mundo, sed in nulla parte mundi. 3^a dicit quod tales
pretericiones et futuriciones solum sunt ibi ubi fuerunt
vel erunt illa quorum sunt pretericiones vel futuriciones.
4^a via dicit quod tales veritates sunt ubique, quia
ubique immediate causant quotlibet alias veritates; et 5
per consequens, cum non habent instrumenta per que
causant, sed immediate per se ipsas, sequitur quod
sunt ubi causant. | Si enim aliquis esset locus in quo B 146^b
A non causaret, tunc totus ille locus distaret ab A, et
per consequens ad omnem punctum illius loci causatur 10
distancia inter ipsum et A; et cum utrumque extremum
cuiuslibet relacionis causat 2^{am} relacionem, sequitur
quod per illum locum causat A quotlibet relaciones;
et sic est potencialiter A per illum locum; et cum non
habet *esse* absolutum, vel instrumentum potenciale, aut 15
alium modum essendi secundum quem foret alicubi,
sequitur quod sit ubique: et hoc videtur michi pro-
babile.

Et sic conceditur affirmaciones positivas prius esse
ubique, sed non omnes, cum affirmacio habens effectum 20
replendi locum, vel informandi, solum est ubi informat.
Si enim equivoce accipiatur *esse* in loco, secundum
quamcunque causacionem (dimittendo tamen famosiores
modum essendi 2^m replecionem loci vel informacionem)
non video quin ad illum sensum posset concedi quod- 25
libet *esse* ubique; et sic esset corpus in loco a quo
distaret et versus quem movetur. Sed quia loquendum
est ut plures, et sapiendum ut pauci, conceditur quod
habens alium modum essendi quam per causacionem
in aliquo loco, solum est ubi illo alio modo est; ut 30
replecione loci, actuacione in loco, vel alio tali affinio.

Unde negatur quod humanitas Cristi sit ubique,
quamvis verbum, quod est illa humanitas, sit ubique;
negatur eciam quod quantitas vel qualitas corporea
correspondens Cristi sit in Eukaristia. Nec sequitur 35
ex hoc quod illud corpus sit ibi non quantum nec
quale, sed bene sequitur quod est *illud quod* non est
quantum ibi. Alii tamen dicunt quod corpus Cristi est
quantum, et quale, et quomodocunque accidentatum in
Eukaristia quo ad accidencia absoluta independencia a 40

8. ubique B; *ib.* Si enim aliquid esset | si enim aliquis esset B.

31. afflu^o; *olliv* B. 34. correspondentis B. 35. sequitur nec sequitur B.

loco, sicut est in celo ubi extenditur; et sic omnis
quantitas est figura, vel numerus parcium, et omnis
continuacio parcium vel posicio (que est differencia
quantitatis) cum ceteris qualitatibus, est concomitanter
5 in Eukaristia; sed non est sic de accidentibus respectivis.
Et ex hoc subtiliantur quotlibet conclusiones.

Christ's Body
has in the
Eucharist all
the accidents
that are
independent of
place.

Probabile vero videtur quod omnes partes correspon-
dentes Cristi sunt in Eukaristia sine posicione, figura,
vel quantitate harum continua, sicut humanitas Cristi
10 non concomitatur ubique existenciam Verbi quamvis sit
eadem persona; et quo ad permanenciam correspon-
dentis transsubstanciati soleo dicere quod non anichi-
latur vel corrumpitur ex vi conversionis, sed manet
unum corpus subiectans accidencia panis, quod voco
15 corpus mathematicum in abstractum. Sicut enim sub-
stancia prius non est ens quam est quid, sic panis
prius natura est corpus quam est panis vel cuius-
cunque alterius speciei specialissime. Et sic idem esse,
quod prius est panis, manet corpus sub illo gradu
20 quidditatis generalis; sed non manet pure corpus Cristi
nec panis pure, sed panis convertitur in corpus Cristi;
quia panis manet corpus Christi sacramentaliter, existens
sub illis accidentibus sub quibus formaliter panis fuit.
Unde, quia panis non est corpus Cristi primarie
B 147ⁿ existens per illum | situm, sed subordinatur ut sit
sacramentale signum corpori inibi principaliter existenti;
ideo non manet post conversionem panis; sicut quidam
dicunt propter talem causam elementa non manere in
mixtis in actu, sed tantum in potencia. Quia vero ista
30 materia isti loco est inpertinens, ideo non tracto eam
ulterius, sed exspecto determinacionem tractare de
speciali quidditate illius sacramenti sensibilis remanentis.
Accidens autem est sicut quelibet creatura est sub-
stantia, quia per se illis accidentibus que videmus
35 subiectata; quia aliter foret nimia sensus illusio.

But I think
that the
different parts
of Christ's
Body are in
the Host
without
position, figure
or quantity;
and that the
bread is not
annihilated, but
remains a body
which is the
subject of its
accidents, and
which I call a
mathematical
body.

The bread is
not Christ's
Body, but is
the
sacramental
sign of that
which exists
principally in
it; therefore it
cannot be said
to remain after
transsub-
stantiation.
But this being
irrelevant
matter, I prefer
dealing with it
separately.

2. figa^r B.
illum B.

3. que^c B.
26. ibc? B.

7—8. corr^e B.

25. per illum | per

15. *Corpus mathematicum*. See, as to the successive stages of Wyclif's opinions on the subject, *De Benedicta Incarnatione*, by Dr. Poole. *Int.* IX. 31. *Tractare*. Wyclif kept his promise in *De Eucharistia*, but at a time when his ideas were much more developed than here.

We thus admit that things are said to be in different times and places most equivocally; as we see for spirit, matter, and compounds of both. The soul is more where its desire is than where its body is; the power of vision is with its object, and may be said to go forth towards it. It disposes the intervening space to become visible, and this is the image that we see confusedly. When we look in a glass, we see the mirror's shape, size, &c. confusedly and its place distinctly; but conversely for what we see in it; and Christ's Body in the Host is thus. Nor does it follow that anything is everywhere as God is, for He is essentially in every point of the universe; other things are there only in imagination,

Redeundo ergo, concedendum est res esse valde equivoce in locis et temporibus, ut patet tam de corporalibus quam de spiritualibus. Res vero que simul sunt corporalia et spiritualia dicuntur locari equivoce, secundum disparem rationem verborum; ut heroyci⁵ sensibili modo dicuntur esse in celo, cum non solum causant in celo relaciones, sed supereminenter afficiuntur et laborant in terris circa celestia. Unde, secundum Lincolniensem, anima est verius cum illo cui afficitur quam ubi informat; et illo modo dicunt philosophi¹⁰ virtutem visivam (et alias) subito egredi et esse cum sentitis: quod sane intellectum non habet calumpniam. Et sic aliqui vocantes species sensibiles in medio dicunt quod ipsum multiplicat se intensius per totum medium; quia aliter non esset res principaliter naturalis, ubi¹⁵ cunque videtur. Et sententia illorum est unica cum ponentibus species; quia nemo dubitat quin medium habet disposicionem ad causandum visionem; et *medium sic disponi* est species illa quam homo sic confuse videt. Sed in speculo videt distincte disposicionem speculi²⁰ quam vocat ymago. Et sic videt speculum confuse quo ad eius colorem vel figuram, sed distincte quo ad situm. Sed illud cuius est ymago videt distincte quo ad ista et erranter quo ad situm. Tali ergo sensibili modo est corpus Cristi in Eukaristia, et non extensive. Et²⁵ ideo non oportet ipsum moveri, sed multiplicari, ut sit ibi.

Nec sequitur aliquod reliquum equiparari deo in essendo ubique, quia ipse secundum nichil sui deest ab aliquo puncto mundi; sed omne creatum ibi existens³⁰ causat immediate et essencialiter ultimate; et taliter claudit contradiccionem aliquid aliud esse ubique. Ideo, de quanto sic causat omne causatum in aliquo loco, dicitur replere orbem terrarum, dum alia que sunt secundum solum fantasticam relacionis causacionem³⁵ alicubi non dicuntur nec fantasticè esse ibi; ideo nec active replent omnem locum ut deus, nec causant illud quod subiective replet locum. Ideo dicuntur ab

5. heroyci B. 14. intensio^r B. 21. ygo B.5. *Heroyci*, i. e. the Saints. The first condition of canonization is 'heroic virtue'.

aliquibus nusquam esse. Mundus autem cum sua
quantitate, licet sit ubique, hoc est ad omnem situm
B 147^b cum multis eius sitibus, desunt quotlibet | eius partes
temporales. Et licet secundum se totum sit ubique,
5 tamen pro quolibet instanti eius desunt quotlibet eius
partes. Sed secus est de deo.

and the world
itself, though
everywhere,
has not all its
temporal and
local parts
everywhere in
all time.

Ad 2^m dico quod omne corporeum est extensum,
sicud et omne *moveri* corporeum. Nec sequitur; A
adequate est sic in illo loco, et iam non est adequate in
10 *illo loco; ergo, movetur vel movebitur ad illum;* quia
antecedens potest verificari per ablacionem parcium A,
cum hoc quod residuum illius A fuerit continue in isto
loco. Unde non oportet ex antecedente tali quod A
aquirat aliquem locum; sed solum sit ibi secundum se
15 totum, ubi continue fuit eius pars per reliquam partis
ablacionem; ymmo stat animam multiplicari per ali-
mentum adveniēns noviter assimilatum, et demultiplicari
per partem corporis abscisionem, et sic aquirere et
deperdere locum sine sui motu locali per se vel per
20 accidens. Habet tamen unum equivalens, quod dicitur
multiplicacio vel demultiplicacio. Conceditur ergo quod
te esse est ibi ubi iam est pars tua, quia ad illum
locum, sed non secundum se totum in illo loco, sed
erit per partis ablacionem, cum idem sit quodcunque
25 ens et ipsum esse.

To the 2nd we
reply that what
is bodily is
extended and is
the movement
of a body.
To be partly
absent from
a place once
occupied does
not necessarily
imply
change of
place.

The soul can
occupy fresh
space by the
assimilation of
food, without
changing its
place.
You are where
your part is,
but not entirely
so.

Nota tamen quod non repugnat, sed est necessarium
pocius, omnem hominis partem esse divisibilem, et cum
hoc esse animam eius indivisibilem, cum quolibet talis
persona sit divisim corpus, et anima, et connexio
30 ambarum. Quod patet ex hoc quod hominem esse
sanum est qualitas multiplicata, et hominem esse
iustum. Et sic de quotlibet virtutibus: iam oportet
subiectum illorum accidencium (quod est hominem esse)
correspondenter multiplicari, ut est satis notum. Nec
35 potest dici quod aliquod tale accidens habet partes
extensivas, cum manet eadem virtus, abscissis partibus
que insunt ipsis adunatis.

Every part of a
man is
divisible; his
soul being
indivisible; for
in every part
you find body,
soul, and
union of both.
Health, justice
and all virtues
are qualities
that exist
throughout the
whole man.

Sed ulterius de *moveri* et aliis denominacionibus
accidentalibus 2^m partem, reliqua parte opposite in-
40 formata, est difficultas perplexior; ut, posito quod
brachium meum per totum moveretur localiter, toto

There is
another more
serious
difficulty about
movement.
When my arm
moves, does
the truth

4. 1^s B; *ib.* z' B.9. z^e *pro* est sic B.37. ad^{nat} B.

I move
exist in all
my body, or
only in my
arm?
Wherever
I am, I move.
But *I move*
applies to
more space
than *My*
arm moves,
since it can be
true though the
arm is at rest.
Thus a whole
of which only
a part is
moved, and he
part itself, are
moved
differently.

Three sources
of
individuation
of movement.

1. The subject
alone, without
considering the
parts or the
velocity; such
movements
exist in the
whole of their
subjects;
2. The subject
together with all
its quantitative
parts;
3. The former
sources,
together with
velocity and
time.

In this sense
movement
is extended.
A mobile that
has motion
of the third,
has that of the
first sort; but
not conversely.
Every accident
exists at every
point in the
universe.

Aristotle
perhaps meant

residuo similiter quiescente, tunc est difficultas, si per totum corpus meum est ita quod ego moveor, vel solum ubi brachium meum movetur. Et videtur quod ubicunque ego sum ego moveor; tum quia ibi motus sum alicubi, cum etiam quia *me movere* (quod differt 5 a motu brachii mei) est extensius quo ad situm quam est *illud brachium moveri*; cum stat, brachio illo quiescente, quamcunque partem mei residuam moveri, faciendo eundem motum continuum quo ego moveor formaliter. Supponendo ergo quod motus individuatur a subiectis 10 que primo denominat formaliter, patet quod alio motu movetur formaliter motum secundum partem et alio motu pars. Et sic variantur motus ad variacionem parcium sic motarum. |

B 148^a

Sed ulterius notandum quod motus potest capere 15 individuacionem suam tripliciter. Primo modo unice a subiecto sine specificacione motus partis vel materie talis motus. Et omnes huiusmodi motus more universalium multiplicantur per subiectum, cum sufficit ad eius existenciam mobile moveri secundum quamlibet 20 sui partem. 2^o modo contingit motum individuari a suo subiecto quod primo denominat et omnibus eius partibus quantitativis, sic quod, quecunque pars defuerit a suo motu, non foret idem motus in numero. Sed 3^o modo strictissime individuatur motus a suo primo 25 subiecto et singulis eius partibus ac materia motus, cum tempore mensurante; et isto modo motus extenditur; ut patet 6^o Physicorum: sed non motus mobilis 2^m partem.

Ex quo patet quod si mobile movetur formaliter 30 motu extenso, movetur motu multiplicato, et non econtra. Nam omnis motus extensus partis facit unum motum cuiuslibet sui tocus multum per suum totum: ut patet noscenti gradus rerum communium. 2^o sequitur quod ad omnem punctum mundi sunt omnia genera 35 accidentium. Cum enim omnis substantia causata sit mundus vel pars mundi, omne autem accidens subiectatur in creata substantia, sequitur quod ad omnem punctum mundi sit species accidentis; quia quod ille mundus est sic accidentatus 2^m totum vel 2^m partem est ubique. 40 Et sic forte intelligit Aristoteles quod universalialia sunt

ubique. 3^o sequitur quod de omni specie extensorum
accidencium, mole indivisibilia et extensa accidentia
simul sunt eiusdem speciei. Nam sicut species et
suum individuum sunt eiusdem speciei; sicut species
5 est sua quidditas; species autem multiplicatur, et in-
dividuum non sic; individuum accidentis mole magnum
causat per totum mundum accidens eiusdem speciei
quo mundus est secundum partem accidentatus. Et
patet quomodo refert accidens causare, quia efficienter
10 denominare subiectum et ipsum formaliter denominare
idem subiectum. Nam omne accidens partis mundi
efficienter denominat totum mundum, sicut individuum
causat suam speciem, et per consequens suum genus
tanquam pars subiective. Et sicut hic causat, sic hic
15 est, secundum modum loquendi essendi equivocum ab
esse dimensionali in loco.

this, saying
that the
universals are
everywhere.
All extended
accidents are
of the same
species.

Et sic forte intellexit Anaxagoras quodlibet esse in
reliquo in quolibet; et sic non refert dicere *hic est*
quod hic vivit et hic hoc vivit; hic est ita quod hoc est
20 *futurum*, et, *hic hoc est futurum*, cum quodlibet sit
ubique. Sed cum in equivocis non sit contradicchio, et
modus essendi in loco sit causa equivoce, patet quod
huic non obviat via que dicit *hoc vivere hic*; hoc est,
secundum partem vivere ad hunc locum. Et tamen, *est*
B 14^b *mortuum hic*, quia *secundum partem existentem in hoc*
loco. Et *hic est quod hoc est futurum et hoc non est*
futurum, hic subintelligendo *secundum molis extensionem*.

This may be
the meaning
of Anaxagoras,
saying that
everything is in
everything else;
it being so in
different
senses, there is
no
contradiction.

Et iuxta istum sensum dicitur ad 3^m quod minor est
falsa, nec valet consequentia deducta per eius pro-
30 bationem. Sed bene sequitur: *hic non est ita quod homo*
est: ergo, falsum est quod homo est hic, ymmo *ubique*
falsum est quod homo est hic, quia *non est quod homo*
est hic. Unde iste terminus "falsum", est terminus
realiter negativus; ut si *falsum est quod homo est*,
35 *tunc hic est ita quod nemo est*, et econtra; et si *est*
hic falsum quod homo est; *tunc hic est ita quod nemo*
est; et econtra.

3. The minor
is false; so
there is no
consequence.
But we may
say: *Here it*
is not true that
a man exists;
so it is false
that a man is
here.

Ulterius conceditur quod deus ubique cognoscit
omnem veritatem, sicut et ubique omnis veritas est
40 cognita. Ymmo ubique omne ens est, cum omne ens
sit deus, et per consequens omnis veritas, et sic de

God knows
all truth,
everywhere.

Besides,
universal being
and truth is
God; yet not
when
limited
to created truth
and being.
Thus God,
knowing
himself alone,
knows all
things.

It is a sophism
to deduce from
this that every
creature is
God.

We must note
in these
allacies which
verb
determines the
adverb.
It is now
possible for
a future instant
to exist, but it
is not possible
for that instant
to exist now.
There are also
other foolish
and useless
fallacies of like
sort.

As, that we
shall know
something to
be when we
do not know it
to be, and
when it is
unknown to
God Himself.

But blessed
be God, who
has delivered
us from these
fallacies!

aliis analogis significantibus meram essenciam sine
qualitate substanciali vel accidentali. Nec sequitur ex
isto quod sic omnis substancia vel qualitas sit deus,
vel quod lapis vel quodlibet aliud sit deus. Et noticia
fallacie figure diccionis solvit objecta: ut patet in 5
materia de ydeis. Et sic deus cognoscit solum seipsum,
et tamen cognoscit omnia; quia non cognoscit ens
quod non est ipse. Verumtamen cognoscit aliud a
se ipso, sed secundum *esse* suum intelligibile vel
secundum essenciam in intellectu secundum quod non 10
est aliud a deo, ut patet 12 metaphysice. Nec sequitur:
quelibet creatura, secundum *esse* suum intelligibile, vel
secundum suum *esse* intencionale, aut secundum *esse*
quod habet ad intra, est deus: ergo quelibet creatura
est deus. Loquendo autem de creaturis secundum suas 15
existencias, conceditur quod deus est ubique, cognoscit
singulas creaturas, licet ipse creature non ubique
cognoscantur, sive sint cognite, cum deus cognoscit res
creatas ubi ipse non sunt, ut nunc loquimur de *esse*
nunc. Et ita non sequitur: *Hic hoc est cognitum; igitur* 20
hic hoc est res cognita.

Unde pro zophismatibus oportet loycom diligenter
notare verbum vel participium quod adverbium loci
vel temporis determinat; quia hoc notabiliter variat
intellectum. Ut: *nunc* possibile est medium instans 25
crastine diei *esse*, et tamen non est possibile ipsum
esse nunc, cum nullum instans vel tempus potest *esse*,
nisi quando est. Sed ulterius fiunt in talibus zophisti-
caciones per capciones que videntur michi modo inutiles;
ut in talibus: *tu scies aliquid esse quando non scies illud* 30
esse, ymmo, quando non est possibile deum scire illud
esse, quamvis quilibet sciulus poterit tunc scire illud esse.
Illa probatur, capiendo istam temporalem: *aliquid est*
quando tu non scies illud esse; que videtur verificari
pro hoc instanti quod tu scis *esse* in seipso, et tamen 35
nichil sciet illud *esse*, cum non erit; et cum, sciendo
ens analogum, sciet illud *esse* tantum nomen; et cum
sciendi ens analogum, | sciuntur omnia. Patet pars B 149^a
ultima conclusionis. Benedictus autem sit deus eter-
naliter intuens omne tempus preteritum vel futurum 40

2. 9^{te} B.

9. omne B.

10. 0e3 pro essenciam B; ib. nte^a B.

11. addeo (!) B.

19. utnc B.

20. de ce u^e B.22. p30^b B.37. t^{um} no^a B.

sibi presens, qui nos liberavit a talibus. Deus enim semper scit quodlibet esse, fuisse et fore; quia verum est quod quodlibet est, fuit, erit pro tempore suo. Et per idem tu nunc scis quod hoc instans fuit et erit, 5 licet non ante hoc, nec post hoc; et patet quod in capcione falsum assumitur pro hoc instanti et quocunque instanti in quo tu nunc existis. Sed pro quocunque instanti precedente *esse* tuum, est verum quod tu scis illud esse, quando non scis illud esse. Et ita 10 conceditur quod tu scis aliquid esse quando tu non scis illud esse, ita quod *ly* "quando" determinat primum *esse* et non verbum *sciendum*.

Sed 2^a pars conclusionis est impossibilis; cum semper fuit, erit, et est, nedum possibile sed verum, deum 15 scire omnia fore, esse, et fuisse. Deus enim nunc scit quod dies iudicii fuit et quod mundus generabitur, quia omne verum deus semper scit vel cognoscit; utrumque istorum est verum, igitur utrumque istorum deus nunc scit. Sed non sequitur: *deus nunc mundum scit*, vel 20 *cognoscit hoc*: igitur *hoc nunc existit*; sed satis est quod hoc sit pro aliqua mensura. Unde ante mundum et tempus est verum quod ipse fuit. Nec est magis incongruum provento quod deus est heri et fuit cras, quam quod Christus sanitates perficit hodie et cras. Illis 25 autem qui nesciunt elevare intellectum suum, videndo quomodo apud deum omnia que fuerunt vel erunt sunt presencia, eciam secundum existenciam suam, iuge forent tales locuciones incongrue. Nec sequitur: *mundus est generandus*; igitur *mundus non est*; sed bene 30 sequitur quod mundus non est pro mensura precedente eius generacionem, que est eternitas in qua non potest esse formaliter. Semper tamen est, quia in omni tempore et eternaliter est generandus, quia in eternitate; et tamen in nullo tempore vel instanti temporis 35 est generandus. Et sic in eternitate non est, intelligendo formaliter; cum non potest esse inmutabiliter eterna eternus et tamen in eadem eternitate est totaliter, sicut quolibet creatura.

Consimiliter dicitur de hoc sophismate: *Necessario aliquid erit, quando ipsum non necessario erit*. Falsum 40

It is clear that there is a confusion between the time of our present and that of our possible being.

But that there can be anything unknown to God is absolutely impossible. He knows now the Judgment Day as past and the creation as future. God's knowledge of anything does not prove that it exists, but that it has a certain measure of being. God is yesterday and was to-morrow; it all things are present to Him, these expressions have nothing absurd in them. 'The world is to be'; therefore it is not in the duration that precedes its existence; and yet *it is*, always, for 'always' means in all time, not eternity. We answer in like manner the sophism which posits that

4. ⁴ mūc B. 12. ⁴ sci⁴ B. 16. ⁴ gab'r B. 23. ⁴ p vecto B. 25. ⁴ clere B.
37. ⁴ et'a et'uns B. 39. ⁴ sophisma(!) B.

23. *Provento*. To one initiated.

'something will
be necessarily,
when it will
not be
necessarily.'
Only absolute
necessity is
opposed to
contingency
of every sort.

quidem est, cum omne quod erit necessario erit pro
quacunque mensura temporis pro qua erit, eo quod
necessarium ex suppositione convertitur cum contingente.
cuiusmodi est omne verum preter necessarium absolute.
Et ita creata est necessitas in ista: *hoc erit* (demon- 5
strata quacunque re contingente sicut in existencia
sue speciei); et cum hoc habet causatam contingenciam
ad utrumlibet in utroque; sed in permanencia, in
prioritate, in maiori utilitate excedit unum commune
suum singulare. Qui autem aliter in prioritate, in 10
maiore utilitate excedit unumquemque suum hoc non
solet. |

B 149^b

Loquebar in hoc tractatu, fuit ex ignorancia huius
sentencie. Nec decet pueros aut provecos sic loqui,
nisi sciolos, cum circumstantiis requisitis. Ideo expedit 15
scire utramque scolam; sed puerilis scola imbrigaliter
onerosa. Scola autem, eciam theologorum, est levis,
dissensiones sophisticas statim excuciens correspondenter
ad condiciones hominum quibus conveniunt iste scole.
Nunc autem sum nimis senex ad penaliter incarcerationum 20
me in scola priori. Ideo, propter facilitatem indulgendum
senibus sequor 2^{am} intelligendo scripturam, et collo-
quentes quando equivocando locuntur ut parvuli.

We may,
however, grant
some of the
conclusions
urged against
us.
V. g.
Something is
necessarily in
the future
when it cannot
possibly be in
the future.
This is verified
in the case of
the Instant.
But *when* is
here taken in
two different
manners, now
determining the
verb, now the
participle.

Verumtamen notandum quod zophismata concedenda
possunt commiseri in illa materia, ut sic, *necessario* 25
aliquid erit futurum quando non poterit esse futurum.
Nam quodlibet instans est pro mensura sui ipsius, ne
sit in infinitum processus in mensuris huiusmodi, ut
patet 4^o phisicorum. Quodlibet ergo instans est futurum
pro mensura sui ipsius; et pro illa mensura non 30
poterit esse futurum, cum nullum instans anteriorari
poterit vel differri. Ista tamen oratio est amphigorica,
secundum quod *ly* "quando", geminatum, potest
diversimode determinare verbum vel participium. Ut
illa: instans iam est futurum in seipso et continue 35
usque ad illud exclusive est futurum in seipso, sed non

3. 9^{tin}te B.
31. antrora B.

5—6. demonstrata B.

9. vt^{te} B.

12. fol^t B.

13. There is no gap here, but it is evident that one sentence at least has been left out. The negligence of the copyist seems to increase as he approaches the end, as may be seen by examining the mistakes in the MS.

poterit in seipso esse futurum ad istum sensum, quod
poterit esse quod in isto instanti A est futurum. Et sic
 signum temporis potest determinare verbum illud *erit*,
 vel participum *futurum*. Igitur super illa equivocacione
 5 contendunt loyci, in suis apparenciis gloriantes. Sic
 ergo quodlibet instans temporis necessario erit, quando
 non poterit fore vel esse futurum. Nec sequitur, *hoc*
erit, quando non erit ita quod hoc erit, ergo, hoc erit
quando hoc non erit. Sed bene sequitur quod *hoc erit*
 10 *quando non est futurum.* Et adhuc in quolibet tali
 potest zophista contendere secundum sensum equivocum.

And logicians
 do battle upon
 these
 equivocations,
 and glory in
 vain
 appearances.

Quidam autem inaniter subtiliantes concedunt quod
 quandocunque aliquid erit futurum, tunc erit; quos (ut
 videtur michi) oportet concedere *Omne quod erit in-*
 15 *mediate post hoc 'fore'; ymmo, omne quod erit, nunc*
erit; sicut semper erit antequam erit, tolletur prioritas
 inter instancia vel quecunque futura, et sic parum
 finitum magnum tempus erit aliquot instancia; et quit-
 libet, ut diucius est futurum, diucius erit. Et sic patres
 20 in fine mundi longe diucius vivent quam vixerant
 patres in mundi principio. Et sic nichil posset senes-
 cere, alterari, vel moveri, cum immediate post hoc
 habebunt omnem denominationem quam unquam habe-
 bunt. Et sic de preterito. Quotlibet talia sunt obicienda
 25 vel dissona; concedendo quod *si tunc est ita quod B*
erit, tunc B est futurum; et tunc est 'fore' ipsius B;
 et econtra. *Si autem tunc B erit, tunc erit ita quod B*
est, et tunc est esse B; et econtra erit. Et ita de pre-
 terito.

Some, with
 foolish
 subtlety, grant
 that
 whenever
 anything will
 be in the
 future, it will
 be;
 it would then
 be before it
 would be,
 all order of
 priority
 between
 different
 instants would
 vanish,
 nothing could
 become old, or
 change, or
 move.
 We, therefore,
 say that if at
 a certain
 moment it is
 true that B
 will exist, then
 B is future,
 and its futurity
 exists then;
 but if at that
 moment it will
 exist, then its
 existence is.
 Nor can we
 admit that
 what is
 becoming is
 always
 becoming,
 nor that white
 is black, &c.
 White, however,
 may be black
 and at the
 same time not

30 Et sic non oportet concedere quod omne incipiens
 esse vel desinens esse, semper incipit et desinit esse;
 B 150^a et quod | album per totum sit nigrum, et sic de aliis
 denominationibus contrariis, pro diversis loco et tempore
 eidem inexistentibus, cum non pro eodem instanti est
 35 hoc album et nigrum per totum; quia tunc foret pro
 illo instanti *ita quod* hoc est simul sic album et nigrum
 per totum, et pro illo instanti inesset huic albedo et
 nigredo per totum. Nec obest, album esse nigrum, et
 tamen illud pro eodem instanti differre a nigro, et esse
 40 aliud quam nigrum, quia ad talem differenciam vel
 alietatem sufficit quod pro aliquo tempore vel pro

5. appuciis B.

15. pt' B.

17. pu B.

18. Φ B.

20. vinet B.

black,
provided that
the thing
which is white
should not be
black then.
Thus the old
man differs
from himself
as a boy; a
man is
different in the
theatre and in
the
marketplace,
melancholy
persons in
autumn are
less sane than
themselves. All
this merely
means
difference from
a certain
suchness of
self.
We must
admit a
universal
subject to
which different
accidents
belong,
and which
is at different
times
differently
affected by
them;
we also admit
quality,
quantity and
accidents that
change
successively.

Movement is
sometimes
more,
sometimes less
rapid; the same
quality is more
or less
intense;
and even if
they have no
parts in
themselves
(as the virtues
of faith, hope
and charity)
they can change
suddenly into a
more perfect
quality,

aliquo instanti sit album, pro quo ipsum non sit nigrum. Et sic formaliter senex differt a se puero, Sors est alter in teatro quam in foro, melancolici sunt demenciores seipsis in autumpno; et sic de quotlibet proposicionibus philosophorum, quas quondam putavi fore puram demenciam. Veruntamen non sequitur ex istis quod idem differt a se, licet differat a se tali.

Unde, iuxta dicta de multitudine accidencium et de gradibus rerum communium, est dare unum subiectum commune quod primo subiectat tale accidens multiplicatum; verbi gracia, est dare unum ignem communem ad istum ignem accidentalem, et quamlibet suarum parcium, qui est subiectum motus multiplicati per totum. Nam, posito quod ignis partibiliter generetur a non gradu, quousque fuerit plene generatus, et abhinc incipiat corrumpi, ubi desit generari, est dare unum ignem ex omnibus istis ignibus aggregatum, subiectantem omnem illam generacionem et istam corrupcionem. Et ignis communis ad singulum istorum componencium est nunc magnus, nunc parvus, nunc sic accidentatus, et nunc modo opposito. Et est dare qualitatem, quantitatem, accidentia successiva, que nunc sunt magna vel intensa, et nunc opposito modo. Et sic quantitas, licet acquirat sibi quantitatem accidentalem, qua sit formaliter magna, acquirat tamen partes quibus quantificatur varie successive. Nec sequitur ex isto quod quantitas illa sit continue eque magna; ut contingit de tempore quod illa quantitas habet differentes scilicet successivas et mole magnas; non sic autem tempus. Et sic habet pro quolibet instanti quodlibet partes simul secundum se totas. Ideo sunt multe manieres successivorum.

Et correspondenter dicitur quod motus nunc est velocior, nunc tardior; eadem qualitas nunc remissior, nunc intensior; eadem etas nunc maior, nunc minor, propter differentes partes. Ymmo, posito quod non habeat tales partes differentes, adhuc suscipiunt successive magis et minus; ut patet de mistica fide, spe, et caritate, que (augmentata materia vel intensa) non componuntur ex suis partibus intensivis, sed est intensione earum continue | nova qualitas indivisibilis quo ad B 150^b

3. Melancolya B.
39. cōtūlione B.

7. the B.

17. ignis pro ignibus B.

28. dn^{tes} B.

partes quantitativas et qualitativas, que tamen per
tempus possunt manere; sicut non contingit de partibus
temporum, cum nulla posset esse diuturnior vel brevior
quam est de facto. Nec sequitur quod talis alteracio
5 sit infinitum velox, qua subito inducitur talis gradus;
quia illa non est velox vel tarda, cum sit subita.
Alteracio autem successiva est velox, quia tanta latitudo
qualitatis aquiritur vel deperditur quo ad tempus,
tantum vel tantum; et diu fuit antequam cognovi
10 huiusmodi successivum.

Non autem sequitur ex isto quod quolibet pars dati
corporis sit quolibet; sed commune ad quamlibet eius
partem est quolibet. Nec sequitur quod corpus gradatim
existens, ille partes sibi succedentes, sit aliqua eorum,
15 sed unum ex illis compositum. Alias autem multiplicavi
argumenta ad suadendum quod nichil potest alterari;
sed vel saltem quod non est alterum una vice quam
alia quacunque. Ut, posito quod Sors, qui iam est
albus, et in B instanti erit niger, swadebam quod erit
20 albus in eodem B instanti; et per idem, quaecunque
aliquid unquam erit ipsum, continue est tale. Nam
tantum album erit Sors, et semper erit omne album
aliud a nigro; ergo Sors nunquam erit niger. Sic quod
non albinus; tunc enim tantum non album erit Sors,
25 cum tamen nichil erit Sors nisi Sors albus; quia si
aliud, tunc illud fiet et incipiet esse Sors; et sic non
quicquid erit Sors iam est, quia Sors niger erit Sors,
qui adhuc non est Sors, et ipse est vel erit aliquid;
igitur aliquid erit Sors quod nunc non est Sors.
30 Argumentatur enim ab inferiori ad suum superius,
cum constancia subiecti negative postposita.

Similiter, tunc Sor in B instanti differret ab albo;
et per consequens tunc omne album tunc differret ab
illo, et sic differret a se. Nam intento Sorte in albedine,
35 sequitur in casu quod longe albior erit Sors in B in-
stanti quam nunc est; et per consequens tunc erit albus.

and this
change is not
infinitely rapid,
since (being
instantaneous)
it can neither
be called quick
nor slow, like
successive
change.

It was long
before I
understood
what
succession was.
Not every part
is every other,
but that which
is common to
every part;
nor, in a body
made up of
successive
parts, is it one
part that is
another, but
the whole
aggregate.
Objections.

1. if any
individual is
white at a
given moment,
he is always
white.

2. An
individual that,
after being
white, has
become black,
would be
different from
whiteness:
whiteness
would differ

12. f3 B.
24. a3ⁱⁿ B.

18. quod sors *twice* B.
34. fore B.

19. in 19^{ti} B.

20. in 19^{ti} B.

15. *Multiplicavi* and lower down *swadebam*. Here follows a series of arguments to which Wyclif afterwards *replies*; so that we may perhaps consider these words as one of the many negligences of the scribe, on account of which (at least partly) I have been obliged to forego marginal notes in many places.

from him, and consequently from itself, since the individual *was* identical with whiteness.

Assumptum patet ex hoc quod, quam album erit Sor, tam album erit in B instanti, cum omne album quod erit minor erit Sor in B instanti quam nunc est; et per consequens tunc erit albus. Assumptum patet ex hoc quod, quam album erit Sor, tam album erit in 5 B instanti. Sic enim locuntur illi qui concedunt quod infinitum minus albus incipit Plato esse quam Sor est albus. Et tunc habetur quod, quam senex vel cuiusmodi-cunque erit aliquid in aliquo instanti, erit et in quo-libet in quo erit. Sequitur enim in Dabitis: *quidquid* 10 *vel qualecunque nunc est Sors, illud et tale in B instanti erit Sors; sed album iam est Sor: igitur, Sor in B instanti erit album.*

3. A king cannot have been baptized, or engendered, since he was not a king at that time. A man is much less a king than he is a man.

Similiter iuxta illam zophisticacionem, sequitur quod nemo generavit istum regem, baptizavit vel percussit 15 istum sacerdotem, vidit istum episcopum, et sic de aliis. Et tamen iste rex fuit genitus, et ille sacerdos fuerit actualiter vulneratus, ille episcopus a quolibet hominibus visus; et sic de similibus. Et tamen fiebat rex; et omnis faccio est generacio; sicut homo est longe minor rex 20 vel papa | quam ipse est homo. Ymmo, si accidens sit B151^a res absoluta que per se potest existere, impossibile est corollarie quod fiat unum ex subiecto et accidente in-formato, cum accidens habet propositam quantitatem, densitatem, et alia eius accidentia, sicut habet propriam 25 entitatem. Et tunc sine dubio nemo sentiret substanciam propter tale accidens, sicut nec sentiret animam vel materiam propter sensacionem continui, aut indumentum propter sensacionem indumenti. Quelibet enim talis sensacio posset manere terminata ad accidens, corrupto 30 subiecto. Cum igitur non accidit sensatum terminare ad quemcunque terminum suum, sequitur quod solum sentitur ens esse sensibile; quod est verum.

If an accident could be separated from its substance, the two could not form a single whole, and we should no longer feel the thing by means of the accident, but the accident that would itself be a thing.

4. Other arguments and conclusions.

Similiter, sequitur quod Sors non est indutus cappa Platonis, et erit indutus illa immediate post hoc; et 35 tamen Plato nunquam habebit aliam cappam quam nunc habet, sicut nec Sors erit indutus aliquo quo nunc non est indutus, nec umquam movebitur versus cappam, nec econtra; et tamen iam distat a qualibet cappa Platonis per mille milliaria. Et per idem sequitur 40 quod iste carpentarius fuit factururus istam domum, et

1. a3⁹ a3^m B. 2. a3^m B. 4. a3⁹ a2^m B. 8. her B. 18. ac't' B.
20. lo^c mior B; ib. 23. c'olle' B; ib. quin B. 40. mili'ac'a B.

tamen nec facit nec faciet istam domum, posito quod faciat istam domum antequam erit carpentarius. Et sic esset possibile quod Sor incipiat esse res nigra, et tamen non incipit esse res nigredine colorata. Et in casu
 5 incipiet esse res que coloratur, et cum incipiet esse res et tamen non incipiet esse res que fuit, vel erit, nigredine colorata. Et tales zophisticaciones reputantur subtiles illis qui concedunt de qualibus specie, quod illa per accidens est illa species. Ut conceditur in casu
 10 theologico possibili quod in fine istius hore fient infiniti homines; et tunc nec fiet aliquid, nec quale, nec res aliquo modo se habens, posito quod Verbum ssumpsit infinitos homines ratione et dimittat eos in fine hore. Et ita possibile est illis quod iam est tantum unus homo,
 15 et infiniti homines corrumpentur vel annichilentur, et nichil absolutum generabitur; et tamen in fine istius hore erunt infiniti homines, posito quod deus assumat duas multitudines infinitas naturarum humanarum, et unam postmodum annichilet; et reliquam dimittat in fine
 20 illius hore. Et in alio casu est possibile quod in hora generabuntur infiniti homines. Et tamen nullus eorum generabitur ab aliquo, quod non est deus nec a deo. Ymmo deus non sciat quando ad istorum hominum; et, posito quod ista hora dividatur in suas partes pro-
 25 porcionales minores usque ultimum instans, et quod in quamlibet istarum parcium deus dimittat naturam unam de illis infinitis assumptis, et post illo modo in 2^a medietate eiusdem partis anichilet eandem, tunc enim nunquam foret aliud istorum hominum, iuxta consequenciam logicam. Et sic est possibile quod duo filii
 30 fuerint geniti de A muliere in B instanti, et tamen tunc non genuit nisi unum filium; et sic potest esse in B instanti, nec genuisse duos filios in B instanti, nec aliter se habuisse tunc quam habuit se. Posito namque
 B151^b quod natura assumpta dimitteretur, | tunc fuisset genita a muliere, cum tamen illa non genuit illam, sed aquisivit per unam puram negacionem.

Comiscendo eciam alios terminos accidentales cum terminis quos vocamus substanciales, contingit in

We can vary
ad infinitum
 our fallacious
 conclusions,

5. colorata B. 6. cipiet B. 7. collerata B. 8. que B.
 13. romè B. 23. qu aditor B. 27. pgiō i 2^a me^a B. 29. aliud
 (sic!) B. 31. mlie B. 38. gmscendo B.

23. The text is certainly corrupt here.

by bringing
in other
but similar
confusions
between
substantial and
accidental
terms.
Examples.

infinitem procedere sophisticando: ut infinitum magnum
spacium in ista hora futura erit pertransitum a Sorte;
quod spacium 2^m totum formaliter in eadem hora et
neutrius spacium corrumpetur, nec alter retrocedit; et
tamen, in quacunque proporcione volueris, Plato in 5
eadem hora movebitur velocius Sorte. Ymmo non plus
quam semipedale est pertransitum a Sorte, quamvis
immediate post hoc infinitum magnum spacium erit
pertransitum ab illo; et sic maius spacium erit per-
transitum ab illo quam ille pertransibit, tamen non plus 10
pedali pertransibit. Et sic in infinitum magnum fuit
pedale, et per consequens nichil fuit maius quam fuit
pedale, quamvis non maius quam pedale fuit illud
pedale, cum solum in infinitum magnum fuit in B in-
stanti in quo fuit solum pedale; quamvis non minus 15
centipedali umquam fuit. Ymmo stat quod infinita loca
replebuntur per istum hominem, in quorum nullo iam
est iste homo; sed quilibet istorum distat ab isto
homine, et tamen nec iste homo movebitur ad aliquem
istorum, nec econtra; nec est multiplicacio illorum. Ut, 20
posito quod sint infiniti homines admodum corporee
dispositi, et quod verbum assumat successive omnes
naturas eorum, ypostestante natura humana unita in
celo non mota; sequitur similiter de possibili quod
deus, faciendo 3^s eternos homines qui potuerunt fieri, 25
tantum perficit genus humanum sicut potest, nec plures
homines quam illos 3^s potuit produxisse: ut, posito
quod 3^s persone divine omnem humanitatem possibilem
assumant yppostatice, que maneat eternaliter unite.
Ultima particula patet 2^m eos qui ponunt personam 30
per subiectum fieri quotlibet homines, assumendo diversas
naturas. Si enim subtiliant quidam, ponendo unum
hominem posse esse infinitos; et contrarie homo de
possibili in A instanti est infinitum minus carus deo
quam erit in B, sine hoc quod unquam demerebitur 35
vel aliquod positum deperdet. Et sic idem homo potest
esse pater et mater et tota parentela sui ipsius.

In all these
cases we have
the *fallacia*
accidentis,

Et ut breviter dicatur, cum omnis terminus per se
in predicamento connotet negacionem, sic quod suum

- | | | | |
|----------------|--|--|--------------|
| 3. futar B. | 3. for B. | 20. raltu ^o or mlti ^o B. | 21. coree B. |
| 22. afmpmat B. | 29. assumat B. | 32. quidem B. | 33. grie B. |
| 35. quod B. | 38. dicitur B; <i>ib.</i> persone (?) <i>pro</i> per se B. | | |

significatum positum manere eadem res non existens sicut qualificatam, patet quod cum omnibus talibus terminis faciendum esset zophisma, et paralogizandum secundum fallaciam accidentis; ut natura humana, que humanitas
 5 dicitur, potest esse, ut homo per hoc quod dependencia ab aliena suppositacione. Et proportionaliter dicendum est etiam de omni termino specifico. Et in tantum extravagantur nostri theologi, quod ponunt deum non solum posse multiplicare corpus per diversa loca, sed
 10 etiam idem punctale singulare multiplicare per spacium infinitum, et idem singulare plurificare ad tantum numerum sicut est maximus numerus mundi, et quodlibet mixtim ydemptificari, et sic de multis impossibilibus.

which can be extended even to all specific names.

Our theologians go far as to admit that a point can be multiplied throughout infinite space, &c.

15 In ista materia, respondendum differenter, iuxta opinionem restringentem tempus et non laxantem tempus presens ad omne preteritum vel futurum. Ad primum dixi quod prima consequencia non tenet; ymmo, tantum album, nigrum, non album (et sic de aliis) erit Sortes;
 20 et sic aliquid erit Sortes; aliquiditer non erit Sors albus; ideo erit aliud ab albo. Sed nichil aliud ab albo erit Sortes. Et istud argumentum sequens peccat in fallacia accidentis que peritissimos fallit ex premissis.
 B 152^a Igitur sequitur | quod aliquale aliquando erit Sortes,
 25 quale nunc non est Sortes; quia *esse album* non est esse *aliquid*, sed est esse *aliquale*. Tunc enim, faciendo hominem, fieret ipse aliquid: quod est impossibile.

The answer to these difficulties must differ, according as we do or do not admit of a present tense including past and future.

1. The change from white to black is a change of quality, not of nature; so that an individual, when not white, will be in some wise (not something) different from white.

2. It is not *whiteness* that would differ from a given individual that is black in the instant B; but all *that* is white; a very different thing.

Ad 2^{am} negavi primam consequenciam; sed bene sequitur quod omne quod erit album in B instanti differet
 30 a Sorte. Et pro ulteriori responsione in illo argumento est notandum quod, tam a parte subiecti quam a parte predicati, contingit terminos similiter supponere pro accidente, vel (ut aliis placet) pro aggregato ex subiecto et accidente. Et specialiter, si fuerit terminus abstractus,
 35 vel terminus qui non [potest] bene per se supponere verbo. Sicut enim concederet philosophus quod statua et es differunt in *esse*, et cum aliis concretis, sicut *esse statuatum* est aliud quam accidentatum, fiunt equivocationes 2^m supposicionem simplicem aut personalem.

A statue and the brass that is the statue differ entitatively.

1. pom B. 5. uc B. 8. erragent^r B. 15. rûdêdi diffuse B.
 16. tpuc B. 20. ad^{te} = adicere (!) B. 30. responsioni B. 35. potest
 deest B. 36. vo² B. 37. drut ce B. 38. acci^m B.

Nota ergo: albior vel albus erit Sortes in B instanti, quamvis album tunc erit Sortes. Nec sequitur ex hoc quod "tam album tunc erit Sor quam album unquam erit Sortes", quia si minus albus, magis albus, aut eque albus tunc erit Sortes, sequitur quod Sortes tunc erit ⁵ albus. Ex quo, ad syllogismum in 1^o prime figure, dixi quod premissae concludunt quod Sor tunc erit *illud quod est vel erit* album.

3. To make a king is but to produce an accidental quality, and a king (*minus* this quality) may be engendered or baptized. Judges ought to apply this point of logic when questioning witnesses. I do not believe that such accidents can be absolute entities: when I perceive whiteness, I perceive the thing as affected by that quality; substance is perceived only by means of its accidents.

There are different questions concerning the sensitive act,

into which I do not enter at present.

Ad 3^m negavi primam conclusionem, cum faccio regis sit generacio accidentis, sicut eleccionem creant papam, ¹⁰ cesares; et ita est dare baptismum vel mundacionem, quia continue baptizatur immundus. Nec obest quod generacione substanciali vel baptismate aque (et sic de similibus) generabatur vel baptizabatur iste rex vel sacerdos. Unde decet iudices nosse loycam suam, ne ¹⁵ examinent testes de accidentibus; ut puta si accusatus percussit illum hominem; vel si iste sacerdos fuit percussus a reliquo. Non ergo credo fore possibile accidens fore tale absolutum; quia sine dubio oporteret, illo dato, ponere quamdam informacionem mediare, a quo ²⁰ formaliter et immediate subiectum est taliter accidentatum. Et ita, sciendo album, vel quodcunque aliud accidens, senciam rem taliter accidentatam. Utrum autem illa res sit substancia, homo vel quecunque alia species, non est sensus discutere, sed virtutis superioris. Ideo ²⁵ dicit Aristoteles quod substancia non sentitur, nisi per accidens; quia accidens sentitur sub ratione qua huiusmodi; et accidit substancie taliter esse accidentatam.

Sed dubium an quilibet habens unum actum de sensibili habeat infinitos actus de partibus eiusdem, quarum ³⁰ deperdicionem vel adquisicionem ille non participiet, ablatis vel generatis ipsis substanciis. Vel an est dare unum per se sentitum, ad quod per se terminatur actus et per accidens ad quotlibet alia. Et si eadem species potest vicissim sentire naturaliter et singulariter infinita ³⁵ similia presentata, et per consequens nulla talis certificatur evidenter de obiecto. Vel an solum manet species in presencia obiecti, vel an non est ponenda, 3^o, si idem actus in numero et eadem species potest manere, nunc intensior et nunc remissior. Ista dubia relinquo alteri ⁴⁰ loco, gracia brevitatis.

4. *before* albus a|| B.
37. a^r B. 38. a^e B.

32. a^r B.

35. potest vicissim *twice* B.

Sed notandum secundum viam veritatis quam modo profiteor, quod possibile est, ymmo verum, quod homo genuit datum regem. Sic enim 2^m locucionem scripture et philosophorum: *Ceci vident, Sortes senex differt a se puero*; per idem *Yesse | genuit David regem*, quia genuit eum qui terre sue est rex. Unde propositiones huiusmodi sunt equivoce, ex hoc quod potest fieri compositio in sensu composito; ut pro eodem instanti sit inherencia predicati ad subiectum, vel divisim quod suppositum alterum extremum insit supposito reliqui extremi, ipsis pro diversis temporibus sic accidentatis. Unde, sicut deus simul tempore dampnat et beatificat pro diversis locis (ut in inferno et celo) sic idem homo pro eodem modo gignitur et regnat, sed diversis temporibus; quia 15 *omnia tempus habent*. Et ita non sequitur: *Petrus nunc gignit istum regem*: igitur, *ille nunc est regens*, vel *rex*; sed satis est quod nunc sit gignicio, et ille est rex pro quocunque tempore assignando. Et ita de similibus est dicendum.

20 Unde homo, quandoque gignitur, quiescit; ut puta quando illud semen est in alterutro parente vel utroque; et sic concedi potest quod quilibet nostrum fuit in lumbis progenitorum nostrorum. Sic conceditur quod homo est terra; propinqua vero generacio hominis fit 25 successive in utero, propinquissima vero in unione yppostatice anime cum corpore; et sic alia corpora inanimata sunt propinqua sue generacionis 2^m partem. Et manet consequencia, dum aliqua pars quantitativa corporis duraverit. Ut, posito quod A ignis incipiat 30 parcialiter generari usque ad finem istius hore, in quo erit ignis octupedalis plene generatus; et quod post incipiat corrumpi, tunc manebit continue idem A ignis qui maneret, subducta corrupcione; ymmo qui maneret, corrupcione concomitante generacionem. Sed a tempore 35 mensurante generacionem videtur quod huiusmodi animatum capit suam individuacionem; ita quod, si aliud sit tempus mensurans generacionem forme materialis, est aliud generatum. Difficultas autem logica procedit ulterius, si pro instanti gignit datum regem. Et probabili 40 liter potest dici quod non, sed ad minimum pro isto tempore quod includit faccionem istius hominis, et

I assert that a man can truly beget a king, according to the expressions of Scripture

and philosophy.

But such propositions can be understood in two senses

— in the compound or in the divided sense,

either meaning that he who is a king was begotten before or when he is a king.

As God damns and beatifies at the same time in divers places, so the same man is begotten and reigns at

different times.

Thus a man may be *begotten* without any movement consequent on that: i. e. in the future.

And man is earth in the same way.

The nearer generation takes place after

conception, and the nearest when the soul is united to the body.

We do not admit that the begetting of a king is an instantaneous act.

3. Si *pro* sic B.

17. gñgnico B.

20. queſt B.

39. gñgnit B.

faccionem eiusdem ut sit rex. Et sic nemo incipit gignere ipsum regem, nisi sumendo gignicionem pro constitutione dignitatis regalis, quam deus vel populus diu post facit postquam est genitus ut homo.

4. I at first admitted the four conclusions of this argument, but now find them very childish.

Ulterius quo ad 4^m concessi 4^{or} conclusiones tamquam 5 possibiles. Nunc autem videtur michi subtilitas nimium puerilis. Nam Sor est pro tempore suo indutus cappam Platonis. Ymmo iam est immediatus cappe que est Platonis, quia induitur cappam que alias est Platonis. Et ita in casu 2^o ille qui alias est carpentarius iam 10 facit istam domum; et ita Sor erit res nigredine colorata. Et correspondenter de conclusione 4^a.

It does not follow that because something is now, and is to have, another quality, it has that quality now; because now qualifies is, not is to have.

Unde notandum quod idem est dicere, "*Johannes nunc incipit esse album* et *Johannes nunc incipit albari*. Nec sequitur: *Petrus nunc est homo qui tempore suo est rex*, 15 *album vel aliter quomodocunque accidentatum*; ergo *Petrus modo est rex, album*; quia tunc quidlibet semper foret quomodocunque foret unquam. Quando ergo sic dicitur: *Petrus nunc rex est*, adverbium determinat hoc totum predicatum, *est rex*. Nam verbum cum suo apposito 20 predicatur. Non ergo sequitur: *Petrus est mortuus* et *hoc instans est*; igitur *in hoc instanti est mortuus*. Sicut non sequitur cum adverbio loci; sicut omnis locus preteritus vel futurus est, licet non sit modo: sic omne preteritum vel futurum est in magno tempore secun- 25 dum se vel aliquam eius | partem, licet non modo B153^a ulterius.

As or the other conclusions taken from theology. I do not see how the marvels alluded to can be done by God. Some say God can do so, because He is almighty; some, because it is pious to believe of God whatever can be sustained without contradiction;

Quantum ad conclusiones deductas cum tribus evidenciis sequentibus, deum contestor et numina quod non capio adhuc evidencias ad cognoscendum illas, vel quomodo 30 poterit probari deum posse talia. Et, ut sepe dixi, quatuor modi arguendi, quibus nostri temptant hoc probare, hoc non movent efficaciter. Quidam enim arguunt quod deus potest talia, quia est omnipotens et potencie infinite; quidem per locum *a simili*, quia 35 fecit magis mirabilia; quidam per locum ab auctore; et quidam, dum deficiunt argumenta, assumunt predicando quod pium est credere de deo quod sit tam omnipotens quam potest sustineri sine repugnancia ipsum esse;

2. finūda B. 8. i^{me}19 B. 9, 10. Platonis quia induitur cappa que alias est cappa Platonis quia, etc. B. 20. appto B. 29. nūma B. 30. quō B. 37. quidem B.

sic, induendo habitum responsalis, utuntur suis fictis invencionibus. Ista ergo humanitas, que est natura humana et non divina natura, est assumpta, et illa est deus, et incipit esse, sed non deus: ut patet nutritis
 5 in recta logica, ut allibi declaravi diffuse.

thus shifting
the burden of
proof.

Uterius dubitatur si omne quod erit simul est cum quolibet quod est, tam quo ad locum quam quo ad tempus. Et videtur quod non, quia tunc omnium terminatorum forent ultima simul; et per consequens nulla
 10 foret distancia, eo quod nichil esset solum, cum omnes viri et omnes mulieres simul habitarent, et comederent, et dormirent, et quomodocunque aliter se haberent.

Whether all
things are
together, both
in place and
time.

*Arguments
contra.*

1. If so, the
extremities of
all things
would touch;
distance
would exist
no longer, and
all would be in
confusion.

2. All future
things would
exist eternally,
and
immediately,
after the
present instant.

And God,
being in the
future, would
not be in the
present.

Similiter, tunc omne instans futurum est, quando quodlibet reliquum erit; et ita, ut videtur, omne futurum
 15 semper erit, quia tunc dederō tempus eternum, et tunc erit semper; ergo, omne futurum erit semper. Et per idem immediate post hoc instans, quia tunc. Et illud *tunc* est immediate post hoc; cum tamen deus erit semper, quia in hoc instanti quod est presens, non erit, cum
 20 per idem omne quod est immediate post hoc est, et nec incipit nec desinit semper esse. Nec videtur color igitur michi negando consequenciam istam: *in B instanti hoc non erit et idem instans est vel erit aliquando: ergo aliquando hoc non erit.*

Similiter, iuxta illud sequitur quod in magno tempore eterno Sortes est et non est, eo quod per idem quo Sor in illo erit (quia in aliqua parte eius), in illo
 25 eciam non erit (quia in aliqua eius parte). Confirmatur tripliciter; primo per hoc quod in illo tempore sciatur
 30 non esse, et nunquam sciatur non esse, nisi quando non erit. Igitur in illo tempore non erit. 2^o per hoc quod, quandocunque illa propositio sic primarie significans est falsa: *hoc est*, tunc hoc non est; sed in illo tempore erit falsa: igitur in illo tempore non est. 3^o

3. A man
would exist
and not exist
in the same
eternal time;
in a certain
part he would,
in a certain
part he would
not.

Proofs.

per hoc quod hec est falsa *per illud tempus, hoc est*, et sibi contradicit hoc; *in illo tempore, hoc non est*, igitur illa non est vera. Non enim contradicit sibi ista
 35 *per illud tempus hoc non est*, quia tunc contradictorie essent simul false. Propter talia communiter conceditur

If a thing takes
place in a
certain part
of a given
time and space,
it takes place
then and there.

40 quando *illo tempore vel loco hoc est*, et *in illo eodem tempore hoc non est*, quia in aliqua eius parte.

1. rn^{li} B.15. ded^o B.

29. in nullo B.

41. eius *twice*.

On the other hand, if a thing is non-existent at any time, it is always non-existent; and yet it is existent at a certain time.

What is non-existent at any time is so in eternal time, i. e. always; and what is existent, *vice versa*.

We could also say that the world is not everywhere, because it is not in every part of space: so it is everywhere

and nowhere; and so too of everything divisible into parts.

It would follow that a man could exist after dissolution;

that all things future are simultaneous; that as we shall exist when we are no more, we were before our conception; that everything will come to an end after it is ended &c.; which destroys the very notion of priority in time.

Sed contra illud videtur primo, quod si aliquid aliquando non est tunc ipsum semper non est, et per consequens nunquam est; et tamen aliquando est. Videtur quod ista singularia contradicunt. *In illo tempore hoc non est et in illo tempore hoc est*. Mirandum enim esset 5 quod in omni tempore quo hoc est, hoc non est, et tamen in omni tempore quo hoc est, hoc est (demonstrato instanti vel alio quocunque subito). Omne igitur quod aliquando non est, in tempore eterno non est, et illud est semper: | ergo, omne quod aliquando non est B 153^b semper non est. Et correspondenter dicendum esset quod mundus in omni loco non est, quia in qualibet parte maximi loci. Et sic ubique est et ubique non est iste mundus. Ex quo videtur quod significatum primum huius propositionis: Iste mundus etc. non 15 ubique esset, quia cum illa sit universalis negativa: *In illo loco mundus non est*, videtur quod equipollet isti: *In nullo loco ille mundus est*: ex quo sequitur intentum. Et per idem sequitur quod omne divisibile in omni loco et per omnem locum non est; cum Sor in loco 20 sibi adequate non est, sic per totum istum locum non est, iuxta opinionem istam. Et sic in omni loco abest. Omne tamen indivisibile non ubique non est, quia est dare situm indivisibilem in quo sic esset quod nulla pars eius foret in quo non esset. 25

Similiter, pari evidencia vel maiori, *post hoc non eris et ante hoc non fuisti*, quia *tunc* non eris, et '*tunc*' erit post hoc. Quo dato, sequitur quod post corruptionem tui eris; quia *tunc* (demonstrando tempus eternum), et tunc post corruptionem tui: igitur. Sic enim conceditur 30 quod omnia que erunt, simul erunt, quia in tempore eterno; quamvis in nullo eius instanti. Dato ergo quod post corruptionem tui eris, et ante generationem tui fuisti, sequitur per idem quod infinitum diu post corruptionem tuam erit corruptio tua. Et breviter, omne 35 temporale post desicionem sui erit, et quodlibet instans post seipsum et ante seipsum est, et quidlibet quod incipiet esse, ante quidlibet et post quidlibet erit; et sic tollitur omnis prioritas vel posterioritas temporis, cum quitlibet quod est semper erit, sicut omne quod est 40

15. etc. *deest* B. 26. *h^c p⁹* B. 36. *deiŋco3* B.

27. I think that '*tunc*' is here taken as a substantive.

ubique est. Et per idem corruptibile ante omne instans non fuit; et per consequens post omne instans non est; que contrariuntur prioribus.

Quantum ad illud dubium constat quod difficultas 5 stat in significacionibus terminorum. Videtur ergo michi probabile quod nulla sunt simul tempore, si non sunt simul in eodem instanti temporis, licet omnia sint simul secundum esse intelligibile pro instanti eternitatis. Aliqua autem esse simul in loco possunt intelligi 3^r. Primo, 10 quando sunt per eundem locum, sicut deus et creatura, forma et suum subiectum. 2^o modo, quando ultima locatorum immediate constituentur; ut corpora, vel quaecunque alia se tangencia. Et 3^o modo, quando idem locus, quantumcunque amplius, continet utrumque; et 15 in quolibet istorum trium sunt quotlibet gradus. Et sic omnia sunt localiter simul in mundo, et non temporaliter simul secundum exigenciam in genere; quia idem indivisibile temporis continet quotlibet temporalia secundum se tota; non sic autem de indivisibili loco. Ideo noviter 20 restringitur simultas temporis plus quam loci. Quod si loycus non contentetur de casibus huiusmodi, dicat quod omnia simul sunt temporaliter sed non instanter, vel in quocunque tempore; sed in maximo tempore sempiterno non contendo. Sicut enim omnes partes mundi 25 collective sunt simul localiter, sicut exercitus, quamvis per se distarent ab invicem, sic omnia instantia et partes temporis possunt simul dici in magna tempore eterno. Stat enim duos comites ire simul, licet non sint immediati; nec differt talis simultas a simultate qua 30 locata sunt in quantumcunque magno loco, nisi secundum magis et minus.

B 154^a Tenendo ergo istam logicam, potest dici quod tota | prima deduccio non procedit propter equivocacionem. Extendendo ergo hoc adverbium, *simul*, ad omnem essen- 35 ciam in loco et tempore, potest dici quod prima deduccio non procedit propter equivocacionem in simultate, cum illa tangunt se que sunt posita secundum se vel aliquas earum partes sine aliquo situationaliter intercepto, ut sunt res immediate habentes partes. Unde stat quantumlibet 40 distancia habere aliqua eorum simul, cum cuiuslibet subiecti accidens sit per totum mundum. Nec sunt

This is a question of which the difficulty consists in the sense given to words.

I think that *simultaneity* must

imply the same instant of time.

But beings may be in the same place, either

(1) coexistent throughout the whole, or

(2) touching each other in a given part of space, or

(3) merely contained in any way in space.

All things are together in space, but not in time;

many things can be simultaneous,

i. e. at the same instant, but no two can coexist in the same point.

Or we may say that all is simultaneous, but not at the same instant, only in eternal time.

Answers to arguments.

1. This is solved by noting the difference of sense of words.

If *together* be extended to all space and time, extremities of things will not necessarily touch.

19. nou^t B. 21. g^tent^r dec^ais B.

26. dist^{ent} B.

32—33. Te-

nendo—equivocacionem *sic* (!) B.

Together
is used now
in a wider
and now in a
stricter sense.

2. Everything
future must
exist in eternal
time; but
there is a
quibble in
the argument.
Always may
mean "eternal
duration", or
"throughout
eternal
duration", or
"in eternal
duration".
What is future
is always is
true in the last
sense only.

Past, present,
and future are
not contrary
but relative, as
magnitude and
smallness;
it is only
impossible for
the same time,
relatively to
the same
instant, to be
completely
present, past
and future.
Always and
now may be
taken either as
substantives or
as adjectives,
usually
without change
of sense.

3. It does not
follow, because
a man is
non-existent in
a certain part
of a time,
that he is
non-existent
in that time;

conclusiones posterius reducte et inconvenienter, cum sint quilibet gradus in simultate; ut aliqui sunt simul in provinciis, simul in patria, aliqui in villa et aliqui in domo, et aliqui striccius.

Ad 2^m conceditur quod omne futurum est quando 5 quidlibet est, quia etiam magno tempore eterno, sed non sequitur quod *hoc tunc est*, et *tunc est semper* vel *immediate post hoc*; ergo, *semper est*, propter equivocacionem in li "semper". Nam ipsum potest teneri in habitudine nominativi casus, vel ablativi casus, vel ac- 10 cusativi casus, ut sic: hoc est semper unum sempiternum quando vel per omne quando vel in omni quando. Tenendo ergo minorem argumenti facti ad secundum sensum, tenet consequencia; et alter equivocando non valeret. Ulterius facilius est videre quomodo deus, mundus, et 15 similia, semper erunt; quia in omni tempore vel instanti; et per consequens omne tempus vel instans erit; et sic hoc instans (quod est presens) erit quod post hoc instans quodlibet ipso presens; primum autem instans mundi est post instans eternitatis, quia natura- 20 liter posterius. Nec sunt iste difference temporis contrarie, presens, preteritum, et futurum; sicut magnum et parvum non sunt difference contrarietatis quantitatis. Sed bene repugnat idem tempus respectu eiusdem in- 25 stantis temporis esse secundum totum presens, preteritum, et futurum. Idem tamen tempus quod iam est presens, prius fuit futurum, et postea erit preteritum. Notandum tamen quod hoc adverbium, *semper*, sicut hoc adverbium *nunc*, potest nunc sumi adverbialiter nunc nominaliter, et ut plurimum non est diferencia quo ad sensum. 30 Unde semper potest nunc sumi pro quocunque tempore perpetuo, et nunc pro maximo tempore similiter, et 3^o pro quacunque completa periodo. Ex quo patet quod stat Petrum et quodcunque perpetuum quod incipit post primum instans temporis, semper esse; et tamen 35 aliquando non esse, accipiendo primo modo et 3^o modo.

Ad 3^m dicitur quod non sequitur: *Sor in aliqua parte illius temporis non est*, igitur *in illo non est*; eo quod consequens convertitur cum ista: *Sor non erit in isto*. 40 Nec sequitur argumentum a simili; ut si aliqua pars

6. quilibet B.

9. albt^{vi} B.

19. ipo' B.

31. scū pro sumi B.

illius videtur a te, et tamen non oportet si aliqua pars illius non videtur a te, quod hoc non videtur a te. Ad primam confirmationem negatur maior, quia negacio, si est, est eterna. Per idem negatur assumptum
 5 2^e confirmationis. Et ad 3^{am} dicitur quod universali affirmative assignate confirmationem contradicit hoc: per aliquam partem istius temporis successivam hoc non est, et neutra assignata ibidem.

Hoc tamen non potest teneri, nisi a concedentibus
 10 continuum componi ex non quantis; quia motus terminatus ad dandum instans exclusive non durabit per tempus terminatum ad illud instans inclusive, nec per aliquam partem illius temporis non est, nisi ultimum instans ponitur pars illius temporis. Et conformiter
 15 dicitur, capiendo divisionem, mortem, vel unum tale cuius non est dare mensuram in tempore, 2^m negantes compositionem continui ex non quantis. Nam tale semper non erit, sicut semper sciatur esse falsum quod hoc est; et tamen aliquando hoc erit, quamvis nunquam
 B 154^b erit ita quod hoc est, ut | communiter dicitur. Illi enim assentiunt semper tali propositioni, *Semper sciatur hoc non esse*; et tunc oportet eos concedere quod, dato illo tempore, in illo sciatur hoc non esse, et in illo non sciatur hoc non esse, et per hoc tempus a principio
 25 usque ad finem, et in illo non sciatur hoc non esse. Et per hoc tempus a principio usque ad finem iam divisio non erit vel completio pertransicionis, vel unum tale cuius non est dare mensuram adequatam; et in illo tempore, et in infinitis partibus eiusdem, hoc est.
 30 Non enim contradicunt ista, nec talia in similibus terminis huius vie assignata; per *hoc* tempus, *hoc* non dividitur. Notum enim est quod pari evidencia quo mundus durabit per tempus sibi adequatum, eadem evidencia hoc semper non dividitur; quia per omne
 35 tempus et per omne instans, et aliquando dividitur, sed nec per tempus nec per instans. Ideo oportet concedere quod in aliquo tempore hoc dividitur in quo non dividitur; et per consequens omnia superius reducta sunt sequencia ex illo. Vel mutando propositiones in
 40 contradictorias qualitates est undique difficultas dare

if you do not see part of a thing, it does not follow that you do not see the thing.

To maintain this, however, we must grant that the Continuous consists of non-continuous elements. If we do not, instantaneous events, not forming part of time, will always be non-existent and yet will exist at a certain time, as in the case of cognition,

and division.

There is in every case a difficulty to find the

3-4. neo B.
 27. p^otuonis B.

4. a^m B.

6. assignat^o B.

7. fuctra B.

contradictories of such propositions, if we do not admit that the instantaneous is a part of time; for though God must always know when a given line is not divided, He can never know it, supposing that the division takes place. I grant that if division takes place, it is either temporal or instantaneous, and an instant is a part of time. So it does not follow that to be in a certain part of time implies to be in that time; nor that to be non-existent in a part of time implies to be non-existent in time.

There cannot be a change from one contradictory to another. Change implies infinite opposition, and we must expound it thus: from that which is not A, B, . . . &c. at a given time there is a change to that which is A, B, &c. But we cannot infer that a thing is not A, B, &c., because it is not so at a certain time.

contradictoria. Ut sic dicendo: *semper scietur istam lineam non dividi*, et *semper non scietur istam lineam non dividi*. Certum enim videtur, secundum communem opinionem, quod quandocunque deus erit, sciet illam, lineam non dividi in casu communi, quia in omni tempore et in omni instanti. Et notum est quod oportet particularem negativam quantumcunque aliquam horum trium in aliquo tempore, vel in aliquo instanti, vel per aliquod tempus vel instans, non scietur istam lineam non dividi: relinquitur quod in tempore non scietur istam lineam non dividi. Constat quod non est signare tempus, quin in illo scietur istam lineam non dividi.

Relinquentes igitur istam difficultatem contrarie opinantibus, concedo quod si divisio vel aliquod tale est, tunc est per tempus vel per instans; et concedo quod instans est pars temporis; et repugnant ista, *semper*, et *aliquando non*; *per omne quando hoc est*, et *per aliquod quando hoc non est*, accipiendo hoc adverbium *semper*, ut generaliter dicunt, pro tempore vel instanti. Et patet quomodo non sequitur si *in aliqua parte temporis vel loci Petrus est*, tunc *in illa est*. Ergo per idem, si *in aliqua parte talis mensure non est*, tunc *in illa mensura non est*. Nec deus unquam scit aliquid non esse quod nunquam fuit, vel est; quia cum deus non potest incipere vel desinere quidquam scire, sed omne quod scit eternaliter scit, sequeretur quod deus simul sciret illud esse et illud non esse. Ideo, ut alias sepius dixi, nulla negacio potest incipere vel desinere esse; nec est mutacio de contradictorio in contradictorium, cum non sit contradiccio ex parte rei. Sed mutacio est ab infinite opposito (ut sic loquar) ad infinite oppositum; ut a non albo, a non vivo, et sic de aliis negacionibus ad album, vivum, et sic de aliis terminis positivis. Tunc autem tenetur negacio infinite, et debet propositio inferri expositorie; ut sic: *ab aliquo quod est non album vel non vivum etc. pro danda mensura est mutacio ad album vel vivum, etc.* Sed non sequitur: *hoc non est album vel non vivum pro illo tempore*, et *illud tempus est*: igitur, *hoc non est album vel non vivum*. Sed potest concedi quod idem ut album et non est album, licet

1. contradicta B. 11. frefre B. 23. aliud *quite plain* B. 32. mutacionibus *pro* sic de aliis negacionibus B. 33. terminis *twice* B.

non simul et semel, sed divisim. Et talia opposita vo-
B 155^a cantur contradictoria | incomplexa.

Tenendo ergo negacionem utrolibet pure negative, et
non infinite, negandum foret aliquid una vice album
5 esse non album, licet sit non album tunc. Et patet
quod non est concedendum quod divisio illius linee
aut equalitas Sortis ad Platonem semper secundum
partem; quia in omni tempore et in omni instanti
temporis, sed non in omni tempore nec per omne
10 tempus erit secundum se totum; quia in magno tempore
est 2^m se totum. Nec sequitur: *in aliqua parte illius
temporis hoc non erit*; igitur, *in omni tempore hoc non
erit*. Nec sequitur: *in aliqua parte illius temporis hoc
non erit*; igitur, *in omni tempore hoc non erit*. Nec
15 sequitur quod in quocunque tempore aliquid desinit
esse, quia in illo tempore ipsum non erit, sicut non
sequitur, si A in aliquo loco deest, quod in illo loco
non est. Non ergo sequitur: *Aliquando non erit A*; igitur
in maximo tempore non erit A, cum idem sit *tunc non*
20 *erit A* et *ipsum A non erit tunc*. Nec est color in illa
deduccionem: *tunc eris*, et '*tunc*' erit post corrupcionem
tui; ergo post corrupcionem tui eris, demonstrando
tempus eternum. Sicut in a simili non sequitur: *super
illud spacium ambulabis*, et *illud spacium est de ultra*
25 *mare parisius*, igitur *ibi ambulabas*. Et sic de similibus
demonstracionibus dicendum est.

Sed notandum quod, ad loquendum logice in illa
materia de temporalibus, preexigitur noticia temporis.
Quamvis homo in infinitum laborando non cognoscit
30 quid est tempus (loquendo proprie de quidditate temporis,
ut dicit absoluta essencia que potest per se esse), tamen
contingit cognoscere quod tempus sit quantitas succes-
siva, mensurans motum: quam quantitatem alias decla-
ravi esse duracionem mundi in *esse* transmutabili;
35 intelligendo per mundum maximam multitudinem crea-
turarum quecunque fuerint. Et sic tempus nostrum
est mundum durare in *esse* transmutabili.

Et ex istis cum aliis veris sequitur quod tempus in-
cipit cum mundo et manebit eternaliter cum mundo;
40 posterius tamen est naturaliter quam mundus vel motus

In this sense
we cannot
admit that
anything which
is at any time
white can be
simply *not*
white: it is not
white *now*.

And thus
non-existence
in a part of
eternal time
cannot be
called
non-existence
in that eternal
time.

And thus it
does not follow
that a man can
exist after his
dissolution
because he
exists in time,
and time is
endless.

Here we
require to know
something
of time;
not what it is
in itself;
that is
impossible;

but that it is a
measure of
successive
motion, and
the duration of
the world in
its mutable
entity.

It follows that
time began
with the world,
with which it
will last
eternally, and

16. quod B
32. q^u B.

18. aly B.

23. assimili B.

25. p^rifuis B.

to which it is
posterior in its
nature.

It was
necessary to
the creation
of the world,
as space was,
but not to its
essential being.

Thus time is
not necessarily
dependent on
the First
Mobile, since
that might
cease to move.

An instant is
an indivisible
part of time,
which consists
of instants as
its elements.
The duration
of the world,
at first one
instant, became
greater by the
addition of
many more;
every one
requiring
another to
succeed to it.

Time and its
instants are
absolutely
without bulk;
the duration of
our world
is absolutely
the same
everywhere in
the world, and
without parts.
If the world is
animated, then
its soul is
immaterial and
ubiquitous;
but the
duration of
the world itself
is not the same
as that of any
of its parts,
of which it is
itself the cause.

iugis. Licet enim preexigebatur tempus ad creacionem mundi, sicut locus ad incepcionem sue locacionis, neutrum tamen preexigebatur ad *esse* mundi, sed econtra. Et sic credo quod non est possibile mundum esse sine tempore, et per consequens quemcunque motum in-5 differenter potest consequi illud tempus. Non enim potest creatura esse mundus, nisi fuerit duracio eius in *esse* transmutabili: quod est tempus.

Et patet quod non essencialiter sequitur motum primi mobilis; quia possibile est motum istum cessare, 10 manente eodem tempore. Unde prius naturaliter est motus dictus communiter quam est motus orbis celestis.

3^o patet ex dictis quod instans diffinitive est indivisibilis pars temporis. Non enim est possibile continuum 15 esse, nisi componatur ex non quantis, et per consequens non restat nec quantum [quod] componeret tempus, nec instans. Unde duracio mundi causata primo ex indivisibili aquisicione variatur instans; ut mora mundi, dum unus est punctus, acquirit situm indivisibilem. Ex 20 quo patet quod non est de ratione instantis quod compleat tempus preteritum cum futuro, nec potest instans per se | esse instans sine successione novi in- B 155^b stantis.

4^o patet quod necessario sunt tempus [et] instans 25 non divisibilia 2^m molem, et per consequens secundum latitudinem et profunditatem. Nam *istum mundum durare* est ad omnem huius mundi punctum, et non habet partes mole magnas, ut motus; ergo multiplicatur per totum mundum. Quod si mundus habeat animam, tunc 30 mundus est due nature, quarum altera est incorporea et multiplicata per totum mundum sensibilem, sicut dictum est de homine. Non enim est duracio mundi continua ex duracionibus suarum parcium; tum quia quolibet duracio mundi est tempus vel instans, et sic 35 alterius rationis quam duracio partis mundi, que est *quando*, causatum a tempore; tum etiam quia, corruptis (per impossibile) partibus mundi, manet continue idem mundus, et eadem est duracio. Ideo duracio mundi non acquirit motum istius partis nec disposicionem 40

1. inge B. 17. non B; *ib.* $\widehat{q}i^{om} (?)$ B; quod *deest* B. 19. mo'a B.
25. $\widehat{f}ut$ B; *ib.* et *deest* B. 37. $\widehat{q}u \widehat{catu} at^{e}$ B. 38. manet P.

alterius accidentis extensam, sicut requirit motus sensibilis esse. Ex isto patet quod idem tempus est, et idem instans aut instancia sunt ubique, sicut ubique est duracio mundi huius.

- 5 Unde alias dixi quod 5^{ter} ens dicitur esse ubique: primo modo, ex hoc ipsum est maximum mole, replens omnem situm, sicut mundus; ab omni tamen pariali situ deest aliqua pars mundi, cum ipsum non secundum totum sed secundum partes sit ubique. 2^o modo dicitur
10 accidens mundi multiplicatum esse ubique secundum informacionem et efficienciam, ut tempus et relaciones subiectate in mundo sunt ubique. 3^o modo dicuntur universalia esse ubique, ut universale corpus, universalis quantitas, que ubique habet singularia, infinitas tamen
15 partes subiectivas habent talia universalia, secundum quas non sunt ubique. Quarto modo veritas dicitur concomitanter esse ubique, ratione sue cause illimitantis ipsum ad situm parcialem, ut dictum est de negacionibus et aliis veritatibus. Sed quinto modo et validissimo
20 dicitur esse singularis essencia ubique, que nulli loco potest deesse 2^m aliquam eius partem possibilem: et tale dicitur replere mundum, quia est prima radix quare aliquid est ubique; et, si sit aliquid [quod] sic sit ubique, tunc ipsum est deus.
- 25 Sexto patet quod tripliciter aliqua dicuntur esse in tempore; primo modo ut corruptibilia, que iniciata sunt post tempus, et desinent in tempore. Talia enim includuntur in tempore, tam quo ad incipium quam quoad finem sue duracionis. Ideo proprie sunt in tempore,
30 sicut aliquid proprie est in loco quod replet locum undique circumdantem. Talia enim habent tempus extra suam duracionem et continue veterascunt cum tempore; ut patet de corporibus mixtis et aliis corporibus. 2^o modo dicitur pars temporis, ut instancia qua vel alienas
35 partes continue esse in tempore, non tamquam extrinsecus mensurata, ut motus et alia extra essenciam temporis; sed tamquam partes inexistentes principiantes

A being may be said to be everywhere
1. as the world, of which, however, each part is only *somewhere*.
2. As time and relations, of which the power and efficiency are in all space.
3. As the universals that have their individual subjects everywhere:
4. As Truth which everywhere accompanies its cause that produces it.
5. As God, whose essence fills the whole world without parts.

Things can be called temporal because they are corruptible, having both beginning and end in time; others (as instants) are temporal as being the very parts of which time consists;

6. p^ao B. 9. 2^{oo} B. 17. illitat^o B. 23. quod *deest*. 25. Sex^o B.
34. 9^m B.

34. *qua*. The word may be *contra* just as well; but as some other words are doubtless wanting, no sense can be made with either word.

tempus. Unde non sufficit ad *esse* in tempore, quod temporaneum sit, dum tempus est, ut videlicet propter hoc sit in tempore, sic quidlibet *esse* in quolibet, quia quotlibet est dum quodlibet est. Oportet | ergo invenire B 156^a aliam rationem essendi in tempore quam est *esse* cum 5 tempore. Et propter hoc negatur communiter eterna, que nec senescunt nec veterascunt, esse in tempore. Verumtamen 3¹⁰ dicuntur aliqua esse in tempore ex hoc quod habent modos accidentales essendi mensuratos tempore; ut corpora eterna habent motus secundum 10 quos sunt in tempore, et deus habet quotlibet relaciones sibi adiacentes secundum quas dicitur esse, fuisse et fore secundum prius et posterius, quamvis aliter quam res create.

How time is in itself a cause of corruption, and a cause of generation by accident. Et sic patet quomodo intelligitur tempus esse per se 15 causa corrupcionis, et per accidens causa generacionis. Quamvis enim nec tempus nec accidens aliquid possit agere, tamen potest facere multa bona, sicut et alie qualitates que non sunt de genere activorum. Dicitur ergo; tempus est per se causa corrupcionis rei corrup- 20 tibilis, quia, dum corruptibile est productum, inevitabile est quin tempus faciat ipsum antiquius et debilius ad durandum, abiciendo ab eo eius principium; ut in mixtis que dicuntur solo tempore veterascere, facit tempus adiacens, causando suas antiquas formas esse 25 debiliores ad servandum humidum in illis quo continuantur partes et disponuntur ad subiectandum formam; ideo incinerantur et veterascunt dispariter secundum modum sue radicalis conglutinationis; et possunt dici continue inevitabiliter corrumpi. Sed tempus mensurando 30 non esse rei ante eius generacionem, non facit quod inevitabiliter ipsa est in fine; ut patet de contingencia rerum, que dependent ex libero beneplacito dei, cum possit esse quod talis res nec generatur nec generabitur; et sic inevitabiliter facere quod datum generabile sit, 35 est per accidens causare eius generacionem.

But though time measures the non-existence of a thing before it is produced, it does not cause its production necessarily at the end of that period. If it did, it would be its cause by itself.

Unde, si inevitable sit quod post finem talis temporis A effectus generabitur, concedendum esset ad sensum expositorium quod tempus est per se causa generacionis illius, sicut est de partibus temporis, etsi contingencia 40

4. quotlib; B; *ib.* q. 13 B.
40. 9^a B.

8. 3^a B.

25. antiquities B.

28. ¹cincaut^r B.

aliqua sunt futura inevitabiliter determinate post lapsum temporis. Tempus enim, et omne successivum dicitur esse de se corruptibile; quia si aliquando est, tunc est in *corrupti*, cum deus non potest servare omnes partes
 5 cuiusunque successive simul pro eodem instanti. Sed diffinitive et differenter a permanente, successivum videtur definiri *quantum cuius non omnes partes possunt esse simul instanter permanentes*. Permanens autem

proprie: "quodlibet ens per tempus durabile cui non
 10 est inevitabile habere partes in *generari et corrupti*".

Et talium sunt multi gradus; ut successiva sunt proprii permanencia quam mixta, cum materia hominis sit incontinens fluxum. Si autem instans et indivisibilia vocantur equivoce permanencia, hoc est equivoce.

15 Dictis istis in communi in tempore, videndum est profundius, persecutando quid sit tempus realiter. Sunt 3 opiniones famose de illo, quarum prima, perturbans bonam doctrinam ex sua ignorancia, ponit quod omne tempus, sicut et omne accidens, sit substantia. Et sic

20 sunt filii huius erroris tripartiti; ut aliqui dicunt omne
 B 156^b tempus esse deum, alii ponunt omne tempus esse

mundum; et alii, omnem rem durabilem esse tempus. Hii autem, volentes antiquare opinionem suam, habent concedere quod semper fuerunt et semper erunt, quia

25 per tempus eternum. Et tamen non possunt durare, nisi per instans, cum sit omnis substantia, vel deus sit solum instans. Et sic, si aliquid incipiet vel desinet esse, immediate post instans quod est presens incipiet vel desinet esse; et sic de preterito. Et perit omnis

30 certitudo de rei diuturnitate, cum nemo potest quicquam facere, nisi per tempus eternum fuerit in faciendo illud. Et sic perirent omnes policie, cum nemo potest secure iudicare de etate alterius, nec diuturnitate operis, nec de prioritate aut posterioritate temporalis, de qui-

35 bus naturaliter innatum est politicis communicare.

Et quamvis tam confusa insit istis congnicionem de tempore aut cognicio, tamen pompant se scire in quo instanti sit dies iudicii vel quecunque coniunctio, op-

40 posicio, sive effectus futurus, quia in instanti proximo futuro, componentes divisibiliter tempus. Ymmo, si

Time is corruptible in its very essence, being always in the act of mutation; the successive is distinguished from the permanent, in that its parts cannot coexist.

We may now inquire what time is in itself.

There are three principal views, the first erroneously positing that time is identical with the substance either of God, or of the world, or of anything permanent. It would follow that all things are eternal since time is eternal, yet they cannot last longer than an instant, as time does. This doctrine would destroy all certitude as to the duration of things.

Yet those who maintain this say that they know when any event will take place; i. e. in the future. But past, present

1. futar B. 4. cor^opⁱ B. 7. viⁱ drⁱ B. 10. inenit^e B. 18. pt B.
 36. tangnic^{om} B.

and future are
all one to
them.

They
contradict
both
philosophical
and ordinary
language to
such an extent,
that it is wiser
not to confute
them, and to
set their
opinion aside
as evidently
wrong.

The *second*
opinion posits
that no
successive
being *is*, but
either *was* or
will be.
If so, then
neither
movement nor
time is even
possible:
what never *is*,
cannot be.

God cannot
know the
existence of
movement;

He can only
know that a
thing will be
moved;
if He knew the
existence of
movement,
movement
would exist.
If God's
knowledge of a
successive
thing is
continuous, the
thing
known must
be so too;

diligenter examinentur patebit quod non refert illis dicere
quidquam fore, esse vel fuisse, cum utrobique sequitur
quocunque tali vocatur pene idem tempus, de quo non
refert enuncciare hoc non fuisse vel fore; quod natum
est destruere omnem veritatem. Patet eciam quod omnia ⁵
que opinati sunt auctores vel vulgus de tempore forent
falsa. Unde, quando philosophus dicit cum plebeis quod
sepeolvebatur celum, causando dies, menses, et annos,
ista stulticia dicit quod nunquam nisi semel, quia solum
uno die, qui sunt omnes dies, et cum mobile sit idem, ¹⁰
spacium idem, et tempus idem, omnis revolutio que
fuit erat revolutio tunc futura. Et examinetur ista posicio
in quacunque sciencia, et inveniatur maior fatuitas solli-
citari circa eius probacionem quam ipsam dimittere
tanquam patenter erroneam. ¹⁵

Secunda fabula, interimens multas disputationes, dicit
quod nullum tempus, motus, aut successivum, est, sed
fuit sic et erit. Contra quam viam alias diffusius ar-
gueram, probando quod ex hoc sequitur nullum succes-
sivum huiusmodi posse esse; quia, cum motus, si est, ²⁰
denominabit mobilem moveri, et tempus rem temporaliter
durare, patet, si non est quod mobile movetur vel durat,
non est motus vel tempus. Et sic nec motus potest
esse vel fore; quia quod mobile successive movetur,
non potest esse vel fore. Nam quod mobile movebatur ²⁵
est eternum, et per consequens non est motus.

Item, iuxta hanc viam, deus non potest scire motum
esse; quia si non potest scire quod non potest esse,
igitur non potest scire quod motus [est], vel motum
esse, quod idem est. Et per idem non potest scire ³⁰
mobile moveri, sed motum iri. Si enim deus aliquando
sciret motum esse, aliquando illud scitum esset. Magna
igitur perversio foret dicere quod deus non potest
cognoscere illud quod philosophi vere ponunt sensibile
commune, ab omni sensu noscibile. Sciencia enim vel ³⁵
est actus, vel habitus, vel relacio que non potest esse,
nisi fuerit in instanti.

Item, sciencia qua deus vel creatura sciret motum
esse, vel est continua | vel interrupta. Si continua, B ¹⁵⁷
tunc iuxta hanc viam scitum manebit continue. Si ⁴⁰
interrupta, per idem in quolibet instanti erit interrupta,

3. \widehat{p}^o *pro* pene B.
or *re* B.

32. esse B.

16. int'imes B.
40. situm B.

29. est *deest* B.

31. *ire*

et sic ultra indivisibilem intercesa; quia sciencia nec
 est instantanea vel temporalis, sed semper nescitur
 nesciencia in deo vel qualibet creatura respectu motus
 vel temporis. Ex istis videtur quod motus non erit
 5 continuus quo ad tempus, quia continue sciatur a deo
 non esse; quia in omni multitudine instancium in qua
 est quodcunque tempus. Aliter enim nullum esset in-
 stans temporis. Si enim instans est instans temporis,
 tunc est tempus in instanti; quia nec diu nec in in-
 10 stanti potest aliquid manere instans temporis. Et per
 idem, si est proportio temporis ad eius medietates,
 vel aliter partes proporcionales, est dare instans pro-
 porcionis huiusmodi, sicut instans continuacionis, in-
 iciacionis, et finicionis temporis; et aliter superflueret
 15 distincio temporis 2^m gramaticos et loygycos in pre-
 sens, preteritum, et futurum. Ymmo omne verbum
 esset presentis temporis; et sicut nullum tempus foret in
 instanti, sic nec in aliqua eius parte, et per consequens
 omne tempus per se totum non foret, et tempus eternum
 20 non potuit fore vel fuisse, quia nec iam nec post hoc.

Est autem modus loquendi philosophorum et theo-
 logorum loqui non sic arcte, sed extensive de tempore,
 ut patet 4^o Physicorum, commento 88. Et ideo, 4^o et
 5^o metaphysice, de priori, 8^o metaphysice et commento
 25 5^o, dicitur quod cena differt a prandio 2^m partes, et
 conformis est applicacio, libro 9^o et 14^o et libro 12^o.
 Ymmo omnes sciencie sic locuntur. Unde propter tales
 evidencias fui primo motus ad ampliandum tempus,
 quia non vidi quomodo philosophus vel theologus posset
 30 negare huiusmodi successiva. Nec capit ingenium meum
 quod sint continua, nisi componantur ex partibus
 existentibus. Sicut ergo medium instans illius hore
 copulat medietates omnes ad invicem, sic illa copulantur,
 causantes tempus, continuacionem, prioritatem, corrup-
 35 cionem, scienciam, ut philosophi vere dicunt. Nec aliter
 aliquod instans vel aliquod aliud posset esse reliquo
 superius aut posterius quo ad tempus, et sic instans
 iniciat, copulat, et unit partes temporis que sunt in

it intermittent,
 it must be so
 at every
 instant, and
 will thus go
 beyond
 indivisibility
 itself.

A given time
 must be the
 double of its
 half, and if so,
 there is an
 instant at
 which this
 proportion is
 verified;
 otherwise why
 make a
 distinction
 between past,
 present, and
 future?
 All would be
 present.

Yet there is a
 mode of
 expression in
 which the
 word *present*
 is really taken
 in a wider
 sense by
 philosophers
 and
 theologians,
 and this fact
 gave me
 the first idea of
 extending the
 sense of the
 word.

As the medial
 instant unites
 the two halves
 of an hour, so
 all instants are
 united with
 each other,
 some being
 intrinsic, others
 extrinsic to a
 given time.

7. enim est B.
 alt' B.

1b. $\hat{1} \hat{1} \hat{1}$ ψ B.

22. arte B.

36. sci^m B; *th.*

38. f^{us} B.

15. *Loygycos*. I have purposely preserved, here and else-
 where, such mistakes in spelling as leave the sense clear, while
 showing the copyist's negligence.

Otherwise I do
not see how
the sacramental
words,
or oaths, or
promises, &c.
could be true.

If nothing is
except at the
present instant,
all the rest of
time must then
be wanting;

Thus in the
middle of an
hour, both
halves are
wanting; and
so through all
time; so there
is no time at
all, if anything
exists, it exists
for ever, and
God is not
eternal.
But it is false
that nothing
is but in this
instant.

There are many
other similar
arguments that
are
unanswerable.
For instance,
as regards the
immutability
of God's
knowledge,

and the free
determination
of His will.

suis mensuris. Aliquod vero instans sic respicit partes
temporis tanquam eis essentialiter intrinsecum, quia
pars eorum, et aliquod tanquam eius extrinsecum, ut
instans proximum priori. Nec aliter video quomodo
verba sacramentalia, verba iurandi, et propositiones
policite quibus fiunt contractus forent vere. Ymmo nullus
sonus vel tremor, nec actus discursionis anime possit
esse.

Item, supposito quod nichil est, nisi in hoc instanti,
patet quod quolibet pars temporis deest in instanti. 10
Suppono autem quod *desse* sit ampliativum, vel ponendo
subiectum abesse a loco vel officio cui poterit applicari
(ut localiter distancia desunt nobis, licet habeamus
eorum possessionem), vel 2^o ponendo rem que poterit
esse [et] abesse ab instanti vel tempore pro quo est 15
verum ipsum *desse*. Sic enim perfectio futura et vana
gloria plene preterita desunt nobis. Ex quo patet quod
utraque medietas illius hore pro medio instanti deest
secundum se totam, et per idem omne tempus, et per
consequens nullum tempus est in illo instanti, cum 20
totum tunc deest. Et per consequens, cum nichil est,
ut false asseritur, nisi illud quod in illo instanti est,
nullum tempus esset; vel aliter, si aliquid est, illud
semper est. Et ideo non est | possibile 2^m istam viam B 157^b
quod deus semper est; quia si sic, quodlibet infini- 25
tum diu est, cum diucius quam semper nichil potest
esse.

Et sic de multis replicacionibus quas alias replicavi,
sic loquendo de sciencia dei et eius determinacione et
possibilitate rerum, restant quotlibet insolubilia vie con- 30
trarie que sunt fallacia isti vie. Ut, si deus scit aliquid,
idem est, et necessario semper scit omnia que erunt
vel fuerunt. Ideo necessaria omnia que erunt vel fuerunt
sunt pro tempore suo, licet non modo. De immutabilitate
vero divine sciencie sunt dicta multa sanctorum et 35
rationes, cum aliter foret minoris permanencie quam
sciencia creature. Ipsa enim non continue variatur pro-
porcionaliter ut cognitum variatur.

Item, si deus se determinat facturum aliquid, tam
certe cognoscit quod determinat se esse facturum illud, 40
sicut ipse scit, quod ego determinavi me esse facturum

aliquid, sed propter determinacionem illud 2^m est necessarium, scilicet, quod ergo determinavi me esse facturum quodcunque: ergo, et primum. Ideo, sicut omne verum est necessarium absolute vel ex suppositione, sic omne necessarium absolute est contingens ad utrumlibet; quia quo ad causacione dei liberrimam, eque possibile est non esse sicut esse; que sententia non potest sustineri nisi ponendo deum esse ante instans temporis, et posse eque non causare datum effectum sic utumquam potuit.

Et per hoc plane patet solucio ad antiquum sophisma de Cristo vidente quemquam in verbo, vel veraciter asserente quod dies iudicii est tunc. Sicut est necessarium quod Cristus sic vidit et dixit, ita est tam necessarium quod sic est. Et similiter sicut potest esse quod non sic est, sic eque potest esse quod non sic vidit aut dixit. Et solum in hoc stat vera solucio, quando omnia subterfugia sunt rimata. Nec aliter video quomodo potest logice sustineri vel defendi sensus scripture, dicentis nos omnes esse filios Adam, Cristum esse filium David et filium Abrahe, cum eius seminibus; quia cum quilibet nostrum ignorat geneloyam particulariter exemplative generacionem huiusmodi, oportet ad ultimum concedere quod dicti patriarche in magno tempore mediate generarunt illos filios; et per consequens, si aliquis sit filius talis patris, tunc habet talem patrem et alius habet ipsum filium. Ex quo sequitur quod relativa sunt convertibilia in tempore.

Unde alias posui adversantibus illum casum quod Petrus, Paulus, et Linus sint omnes homines, et Petro predestinato existente patre naturali utriusque sequencium prescitorum, sit Linus pater spiritualis Petri et Pauli, et sit Paulus pater naturalis Lini sine progressu ulteriori filiacionis. Quo posito, videtur quod cuiuslibet hominis filius est persona dampnata, ut patet expositorie isti vie. Et tamen alicuius hominis non omnis filius est persona dampnanda; quia aliquis filius hominis non est persona dampnanda, quia Petrus, qui est filius Ade, Abrahe, et alicuius patriarcharum qui non sunt modo. Nullus autem catholicus negabit quin, sicut Cristus fuit filius David et Abrahe ad bonum sensum, sic omnes

Answer to
an ancient
sophism
relative to
Christ seeing
any one in the
Word (when
the person did
not yet exist):
as Christ saw,
so it is
necessarily.
It is only thus
that Scripture
can be
explained,
saying that we
are sons of
Adam &c.
We must extend
present time
from ourselves
to the
patriarchs and
to Adam; thus
only can we
have such a one
for father.

A case put:
Peter is
predestinate.
Paul and Linus,
are foreknown
Peter is natural
father of Paul
and Linus,
Linus spiritual
father of Peter
and Paul,
and Paul
natural father
of Linus.
Supposing
them to be all
mankind, the
son of every
man is damned,
yet a son of
man (Peter) is
not damned.

We are sons of posteri Judei, ut dicit beata virgo, eciam nos sequentes | B 158^a
 Abraham, and, ipsos in moribus, ut dicit Apostolus, sumus filii Abrahe
 by nature, of imitatorii, et omnes nos filii Ade naturales. Nec occurrit
 Adam. michi quomodo restringentes tempus vere expriment
 How is this, if we sensum horum, cum secundum eos nec Adam generavit 5
 say that nothing is, but what is non existing?

They would also have to grant that a posthumous child has no father at all; and there are many other like difficulties.

Adam. Et per idem argumentum nec genitus de homine mortuo ante infusionem anime habet patrem; sed foret 10
 nude filius femine et non viri. Et sic de occisione hominis, de causacione sani distantis, de existencia oracionis, de successione generacionis et subiecti agregati ex diversitate sibi succedentibus, que omnia essent impossibile isti vie solvere, admisso modo loquendi autentico 15
 et vulgari.

All that was or will be is, each thing in its own time; this agrees with Scripture, philosophy, and vulgar speech, and solves all difficulties.

Intellecto itaque isto sensu benedicto, quod omnia [que] fuerunt vel erunt, sunt; singulum tamen tempore suo, ut locuntur tam philosophi quam scriptura, est facile respondere ad instancias. Nam auctores et vulgus 20
 naturaliter nunc laxant et nunc restringent pertinenter suo sensui; et sic distributio ac negacio acomoda tollunt controversiarum apparencias.

A third opinion holds that time is a quantity which; though successive, can be indefinitely lengthened by Almighty Power. But I have proved that no individual quantity can be lessened or increased.

3^a via dicit quod tempus et quantitas [sunt] continua, quasi multiplicata linea successiva, sed tantum profunda- 25
 tur in existencia accidencium quod ponit quodlibet eorum posse per se existere; et sic quamlibet partem temporis esse instans, posse quantumlibet diu prolongari ex dei omnipotencia, et quantumlibet indifferenter poni pro quolibet; contra quod alias diffuse argueram, probando 30
 quod nullum ultimum singulare quantitatis potest maiorari vel minorari; quia, cum ad talem motum requiritur aquisicio vel deperdicio quantitatis tamquam sensibiliter motum huiusmodi; sed una successiva idem subiecto, sed non idem numero quo ad tempus et partes 35
 intrinsecas. Tempus ergo est diuturnum ad quod alia diuturna per accidens debent reduci tamquam primam mensuram illius generis; quia si sibi accidentaliter inesset duracio, per idem et illi duracioni; et sic infinite.

1. u'ga B. 12. tacone taccione? B. 12, 13. exna aronia B. 18. que deest B. 22. after ac an illegible word; looks like ac crossed off B.

24. sunt deest B. 26. exna B.

1. Beata Virgo. See Luke I, 55.

Item, si instans temporis posset quantumlibet diu
servari, superflueret deum producere aliquod tempus,
et per consequens illud instans foret divisibile successive
et habens infinita instantia temporis generata continue;
5 et sic ultimum singulare instantis non duraret, sed idem
instans numero 2^m subiectum et non secundum formam,
ut loquitur Aristoteles. Aliter enim tolleretur modus
loquendi de prioritate instantis vel temporis, et per
consequens successio. Si enim instans eternitatis non
10 potest durare successive sine tempore distincto, multo
magis instans temporis non potest sic durare. Aliter
enim possent successive hore, dies, menses, et anni; et
totum foret instans indivisibile secundum successionem.
Et sic quilibet sciret prenosticare quando est dies iudicii,
15 vel quodlibet futurum, quia in hoc instanti; et sic de
aliis intricacionibus iacentibus super eos qui ponunt
tempus quodlibet esse celum.

If an instant
could last a
long while,
why should
God have made
time?

That instant,
besides, would
be divisible and
contain other
instants.
What would
become of
priority and
succession?

All would
become one
indivisible
instant, and
men would
know perfectly
when every
event would
take place.

Item, si per tempus posset sic durare, tunc quotlibet
tempora possent succedere simul, et per consequens
20 minus tempus parificari cuilibet maiori in diuturnitate.
Et sic oportet ponere tempus habere aliam quidditatem
B 158^b preter duracionem, quia omnia tempore eque diu du-
rancia forent per illa, et per consequens deus prerogando
quodcunque tempus cum reliquo, parificaret ipsa ad
25 invicem; et sic instans, vel hora, et huiusmodi, per
accidens forent huiusmodi. Vel aliter deus non posset
sic servare quodcunque tempus cum reliquo. Nam tunc
deus posset facere talia tempora simul incommunicanter
currencia informare subiecta; et per consequens cuius-
30 libet essencie duracio ponendum esse tempus. Et cum
nullum tempus per accidens sit tempus, quelibet temporis
duracio foret tempus. Et per idem duo talia equalia
possent simul componere 3^m; quod foret omnimode
superfluum intensive vel extensive; quia sit res per in-
35 finitum magnum tempus durare et *esse* quantumlibet
brevis periodi; ut, posito quod infinite hore, simul
currentes quo ad fines et incia, constituent unum tempus
quod foret infinitum magnum tempus preter magnitu-
dinem molis. Talia multa possent excogitari contra vias
40 huiusmodi, circa que, ut dicit Aristoteles, est magis
fatuum sollicitari quam est fatuitas impugnandi.

If time could
be lengthened
out, a short
time might be
made equal to
a long one,
and time would
require another
essence besides
duration;
otherwise
nothing could
differentiate
two different
times.

Every
temporal
duration would
be time;

and infinite
parts of time
would make up
a time that is
infinitely great.
It is foolish to
trouble oneself
about such a
theory.

5. id = idem? B. 12. succ^{uo} B. 18. p B. 23. p^{ro}gando B.
29. in fore B. 30. p^{om} B.

The denial of
all accidents is
very unphiloso-
phical;

subject and
accident are
contra-
distinguished.

Time is the
duration of the
world in
successive
change.

It is now here
in particular;
and though it
may be said
to be in the
first heaven,
on account of
its movement
by which all is
measured, yet
if it should
cease, and only
a potter's wheel
were to move,
time would be
the same.

Another time
would mean
another world.

The first of all
instants is that
of eternity;

the second is
the first instant
of the world's
existence; the
others follow
in order, as
they are nearer
to or farther
off this first
instant.

Et correspondenter dicitur ad opiniones negantes omnia accidentia esse; in hac evidencia: si sunt, tunc sunt res que possunt per se existere; que opinio nec est philosophica nec theologica sicut nec eius evidencia. Ideo accidens ex opposito metaphysice distinguitur a suo 5 subiecto. Alias tamen, cum declarative supposui quod mundus sit universitas creata, que est unum compositum ex omnibus subiectis preteritis et futuris, moralibus et materialibus, cui insunt omnia accidentia; et *illum mundum durare in transicione successiva* est tempus, 10 quod individuatur a mundo et genere motus, et mensurat omnem motum particularem. Et sic prius secundum genus sunt prius et posterius in analogo motus quod in tempore [est], licet prius fuit in tempore directe in tempore quam in aliqua specie motus. Et sic, licet 15 nullius partis mundi duracio sit tempus, tamen principalissime secundum Aristotelem est tempus in primo mobili vel corpore celesti quod est quasi forma mundi. Verumtamen, si totus orbis celestis annihilaretur, vel omnino quiesceret, mota sola rota figuli, foret continue 20 idem tempus. Et sic, cum pars mundi individuatur a tempore, patet quod absolute impossibile foret illum mundum, subiectum tempori, produci, nisi producatum cum tempore eodem modo.

Ex quo videri potest ulterius quod sicut nullum 25 tempus vel instans potuit fuisse prius vel posterius quam fuit de facto, sic non potest esse novum tempus, nisi fuerit novus mundus. Nam instans eternitatis est omnino immobile quo ad gradum prioritatis, cum nullum instans potest esse priusquam instans eternitatis 30 est de facto, eo quod habet gradum prioritatis summum possibile. Et immediate post ipsum evenit primum instans temporis, a quo omnis prioritas vel posterioritas temporis mensuratur. Alia vero instantia sunt posteriora, ut ab eo magis distancia et esse priora quo primo 35 instanti mundi singulariter propinquiora. Et cum nullum instans temporis potest sibi esse | propinquius, B 150^a videtur quod nullum instans temporis, nec ipsum nec aliud, poterit esse temporaliter ipso prius, et per consequens mundus, tempus, et instans, cum eius simili- 40

5. exa'o B. 9. malib9 z malib9 B. 13. ft' B. 14. est *deest* B;
ib. drc B. 21. T dinia^r B. 24. codcoo B. 28. nowus B.

bus erant ita primo temporaliter sicut de dei potencia potuerunt. Ex quibus videtur quod mundus non potuit fuisse eternus *a parte ante*, cum tunc quilibet dies noster esset infinitum cicius quam tunc foret.

- 5 Sed dimissa ista subtilitate logica et philosophica, videndum est quomodo locuntur homines plus pueriliter sapientes. Ipsi enim propter variacionem in logica sepe verbaliter contradicunt, ut sapientes concedunt quod homo est homo, licet modo nullus homo sit in actu.
- 10 Ipsi enim ampliarent ad omne ens actuale, ad omne ens possibile et ad omne ens intelligibile, quia aliter esset intelligibile superius ad ens, et intelligibile superius ad *esse*; et sic *posse* non presupponeret *esse*. Et in isto homines multipliciter variantur; ut aliqui concedunt quod homo est semper quodlibet istorum terminorum esse, et negant quod homo est homo, nisi habuerit existenciam actualem. Unde illam proposicionem, *homo est*, sic converterent: *ens est*, vel *potest* vel *intelligitur esse homo*; unde negarent istam consequenciam:
- 20 *Antichristus est, ergo est aliquid*; sed, est *intelligibilis vel possibilis*. Et ita concedunt quod non est idem dicere: *hoc est album* et *hoc album est album*: quia, ut dicunt, *hoc album necessario est album*; quia sic intelligunt: *hoc album est album*: *Si hoc album est existens*,
- 25 *illud est album*. Illud negant quod necessario est album; et sic concedunt quod omne futurum necessario est futurum, sicut omne presens necessario est presens. Ad tantum ergo prodest taliter variasse, quod per hoc intelligi possunt auctores et sensus equivocantes.
- 30 Probabile ergo videtur ampliari hoc verbum *est* ad connotandum omne tempus possibile, sic scilicet, preteritum et futurum, cum preter tale non potest esse tempus. Et communiter concedendum quod omne futurum vel preteritum est, quia in magno tempore
- 35 eterno; sed non in quolibet instanti vel qualibet parte temporis; sicut omne quod est, est in magno situ mundi; et nulla tamen eius parte est omne quod est. Et possunt esse ad hoc 3^s evidencie.

Primo, quia sequitur ex opposito quod omne [quod] 40 est, illud semper est, quia in instanti quod est presens,

We ought here to notice other modes of expression which are less philosophical and lead to apparent contradictions.

The wise, extending entity to all things possible or thinkable, grant that *a man is a man*, even were there no men existing.

But some will grant that a man is intelligible or possible, but not that he is a man, unless he exists.

They say: *This is white*, and, *This white thing is white*, are not the same, the second meaning: *If this white thing exists, it is white*.

It is useful to know these different points of view.

We prefer to use the wider meaning, extending, *is* to all future and past time.

All *is* in eternal time, but not at every instant of that time. A threefold proof of this.

I. Whatever is, is always;

5. locaphica B.

14. zitfto pro et in isto B.

39. quod deest B.

it follows that
the future is
always future;
and the past
always past.

It is too strict
an
interpretation
to deny that
God is always,
because
He exists
only in one
instant
(of eternity).
God's
knowledge
of everything
is eternal; and
therefore
whatever is,
is always, as
the object of
this knowledge.
Yet we may
grant that
nothing is
always except
what is in all
time or exists
above all time.

Some writers
say: God
could have
created the
world before
He did; but
the world could
not have been
created before.

II. If all *is* not
in eternal time,
we must deny
its existence,
saying that it
is made up of
parts that *are*
not.

ut communitur exponitur. Si A instans aliquando est,
et non est aliquod *quando* quin in illo A est, tunc A
semper est. Et per idem, omne quod erit, erit semper,
et omne quod fuit fuit semper, quia per omne tempus
et omne instans. Et per consequens, omne tale foret 5
sempiternum, quia a tempore per quod deus duravit
capit eius quandalitatem. Pari enim evidencia qua con-
ceditur quod quidlibet durat per omne tempus, conce-
dendum est et [quod] quodlibet futurum durabit per omne
tempus; ut patet ex dictis. Sequitur enim: *tunc erit ita* 10
quod hoc durat per omne tempus; ergo, hoc tunc durabit per
omne tempus. Sed ex alio latere negant quod deus vel
aliquid semper erit vel semper est, quia solum per
instans, sed multa fuerunt et erunt semper: que omnia 15
cum consequentibus sunt nimis literalia. Et probacio
omnium istorum pendet super isto quod, si aliquando
erit quod *hoc semper est*, aliquando erit ita quod *deus*
scit quod hoc semper est; et cum deus | nichil potest B 159^b
desinere scire, deus semper sciet quod hoc semper est,
et per consequens semper erit verum quod *hoc est* 20
semper. Et ita *hoc semper erit.* Concedendum est ergo
probabiliter quod nichil semper est, nisi id quod est
in omni tempore, utputa tale quod semper fuit et
semper erit; sicut mundus et alia sempiterna que in-
ceperunt esse. Sed deus ultra hoc est eternus, quia eius 25
demonstracio est supra tempus. Ideo est prius tem-
pore.

Et sic intelligendi sunt auctores qui concedunt quod
deus prius potuit produxisse mundum, sed ipse non
potuit prius fuisse productus. Deus enim habet in eter- 30
nitate *posse* ad producendum mundum; sed mundus
non potest esse vel fuisse. Et ita est de omnibus si-
milibus. Idem ergo est dicere quod *hoc semper erit*
et *hoc erit semper*, cum adverbium sit adiectum, *nisi*
in illo tempore. 35

2^o confirmatur per hoc quod aliter negandum esset
tempus esse, ut superius tactum est, quod nemo con-
cipit; et quod tempus componitur ex partibus que non
sunt, eo quod *componi ex aliquibus* est *causari ab illis*;
et per consequens omne componens est, sicut omne 40
causare presupponit *esse*. Nullum ergo tempus habet

2. al¹ B.9. quod *deest* B.34. adic^t B.

eius magnitudinem a partibus que non sunt; quia tunc magnitudo illa non esset, et per consequens tempus illud non esset magnum. Sed sicut tempus in nullo instanti haberet partes, vel saltem solum illas que continuarentur ad illud instans, vel haberent illud instans eis intrinsecum, sic correspondentem tempus pro nullo eius instanti foret magnum; vel aliter solum pro medio eius instanti haberet medietates, et solum posset habere duas quartas; et sic de aliis partibus aliquotis. Et solum quando iste partes non possunt esse, tunc sine dubio omne tempus maneret continue indivisibile, nunc magis, nunc 2^m quod essent partes vel non essent partes a quibus caperet eius quantitatem.

For at no single instant would time have existing parts, since nothing would be at any single instant.

Conceditur ergo quod omne tempus est divisibile, et habet omnes eius partes, sed non simul proprie; quia non pro eodem instanti, sed in magno tempore eterno, et sic alias prius et alias posterius. Nichil tamen habemus de tempore 2^m se totum simul, nisi instans. Unde necessario omne tempus est eque celeriter in 20 *corrumpi* sicut in *generari*. Nec potest esse, nisi ita velociter corrumpetur et generaretur 2^m partes, sicut posset aliquod tempus corrumpi. Nec sequitur per locum a simili quod sicut ponam esse de rebus permanentibus, cuius non est possibile dare causam ponendo tunc esse 25 rem absolutam que ponam per se esse. Patet igitur quod non contingit bene examinatum vere loqui in materia de tempore, diffiniendo tempus vel continuitatem, temporis prioritatem et alietatem, et ceteras proprietates accidentales temporis et instantis, nisi ponendo 30 tempus componi ex non quantis, et ampliando hoc verbum modo quo dictum. Quomodo, queso, aliud foret ante vel post aliquod tempus vel instans, vel inter instancia, vel unum instans prius reliquo, si semper necessarium est nullum instans esse cum reliquo? 35 Semper enim sciretur sic non esse.

Thus all time is divisible into parts, but none of them coexist, and nothing of time is all at once, save the instant. It follows that time vanishes as fast as it comes into existence.

We cannot, therefore, affirm anything truly of time without positing its composition out of indivisible instants, extending the sense of the verb *is*.

3^o confirmatur illud de fundamentali significatione vocabuli. Nam secundum precipuos hoc verbum rectum, est, significat mere substantiam, sicut pronomina, quia B 160^a significat *esse* |, quod est essentia, non quomodo aliam quam proprietatem accidentalem vel differenciam specificam a qua res caperet suam quantitatem, sicut

III. This can be proved besides by the very signification of the word. *Est* is the substantive verb, signifying essence, and not accident;

11. \widehat{nc} B. 12. \widehat{nc} B; *ib.* essentt B. 17. \widehat{als} B. 23. \widehat{pom} B.
25 \widehat{pom} , B.

thus it does not
connote time by
itself. If it did,
God in eternity
would not
know himself
to be, since
there would be
there no idea
of time.
Est, therefore,
stands for the
present,
without any
addition, as in
adjective verbs,
faciunt omnia, non transcendencia; nec connotant de
se aliquod tempus, sicut verba adiectiva; quia deus
tunc non sciret se esse in eternitate subducto tempore,
quod est impossibile cum in eternitate sit *esse* vel *fuisse*
vel *fore*, cum eternitas sit "interminabilis vite possessio 5
tota simul". Et hinc, secundum grammaticos, hoc ver-
bum *est* significat pure presens tempus, sine successione
connotata, et est verbum substantivum, non significans
principaliter accidens adiciendum subiecto, sicut talia
verba, *currere, movere, fieri*. *Currere* enim est motus 10
adiectus *esse* rei, et ita sunt *quantificari, qualificari,*
referre, agere, pati, ubilitari, temporaliter durare, poni
et habere. Ista enim sunt novem genera accidentium
adiecta substantie, que est *esse* vel essentia rei: ideo
vocantur verba adiectiva. Et hoc verbum *esse* subiectum 15
substantivum non predicatum in quod vel in quale,
modo quo termini connotantes qualitatem rei, sed
mere dicens primam questionem de subiecto, *quod est*
et non *quid est* aut *quale est*. Et ideo ens non est
genus, cum omne genus dicit quiditatem presupponentem 20
questionem, *Si est*, vel *esse* rei cuius quiditas queritur.
Patet ergo, cum hoc verbum, *esse*, sit causa indiffe-
rens ad tempus connotandum, principaliter significat
eternitatem, quod libere potest homo uti ipso ad quod-
libet tempus indifferenter connotandum. Et si obicias 25
quod grammatici determinant ipsum ad tempus presens
connotandum, dicitur sine dubio quod indifferens est
ad omne tempus connotandum secundum grammaticam;
quia posito quod semper fuisset ista propositio: *Tem-*
pus est, semper fuisset vera; et *hoc verum est* continue 30
connotasset omne tempus, cum non caderet a sua conno-
tatione, propter lapsum temporis. Unde et hoc nomen
tempus presens omne tempus significat. Et ex istis patet
quod non sequitur, *A est*, igitur *in hoc instanti*; sicut
non sequitur *Sor currit*, igitur *Sor currit in hoc in-* 35
stanti vel *in ista parte temporis*. Nec sequitur cum
medio ponente hoc instans vel istam partem temporis

and signifies
merely
existence, not
genus nor
species.

Being therefore
indifferent to
time, *Est*
signifies
eternity,
and, though
used by
grammarians in
the present,

it is indifferent
to all time, and
can be thus
applied to any
permanent
truth.

It does not
follow, when
we say that
something is,
that it must be
at this instant.

14. io' B.

16. subm^o fbm^o B.17. t'ino^o B.

19. quid non B.

23. significat principaliter significat B.

31. quotaff^o B.

5. This definition is a famous one, given by Boetius (De Consolatione Philosophica, I. III. prosa 2. near the beginning), and generally adopted by Scholastics.

esse. Et isto modo intelligendi sunt sancti qui dicunt deo omnia esse presenciam in eternitate, quia, ut dicunt, tempus adiacet eternitati secundum se totum, ac si qualitas mundi adiaceret deo qui faceret se esse ad omnem eius punctum. Nec dubium quin conceptus sic loquencium sit verus, quamvis quandoque videbatur michi extraneus.

All things are present to God in eternity; the whole of time being a sort of accident of eternity.

Sed contra illud argumentatur. Videtur enim primo quod omnia instancia possibilis sunt simul, quia in hoc magno tempore eterno. Et per consequens omne quod fuit vel erit est. Et sic nichil potest incipere vel desinere esse. Et per consequens, nichil potest corrumpi vel moveri, et sic omnia sunt eterna, quia intransmutabilia. Si enim Sors potest transmutari, ipse potest esse ubi, quantus, vel qualis non est.

Objections:

1. All possible instants are simultaneous, being in eternal time; all that was or will be, is; nothing can begin, or end, or change.

Videtur 2^o quod omne quod eveniet necessario eveniet; quod si erit, est; et si est, determinatum est ipsum esse; et per consequens necessario est vel fuit quo ad deum. Ergo est tam determinatum hoc esse, quam determinatum erit unquam hoc esse; et sic mors cuiuscunque viventis est cum eius vita; nichil ergo reliquum B 160^b cercius | quo ad deum.

2. Whatever happens, happens necessarily. For what will be is; what is, is determined to be, as necessarily now as it ever will be.

Videtur 3^o quod omnes contradictorie veritates simul sunt; ut puta *esse* et *non esse Sortis* simul sunt. Si enim mors rei est, tunc *non esse* eius est; et si vita eius est, tunc *esse* eius est. Cum ergo omnis mors vel vita que fuit, est, vel erit, est, sequitur quod omnes contradictorie veritates sunt. Et sic de contrarie, privative, et relative oppositis.

3. All contradictory truths exist at the same time: any individual's being and his not-being coexist; so do life and death, &c.

Ad primum dicitur quod conclusio non sequitur; nec sequitur omnia possibilis simul esse possibilis inter se, quia multa sunt possibilis que nec erunt nec fuerunt nec sunt. Ymmo, quamvis omnia preterita et futura sunt, non tamen tempore simul sunt; sed unum est in tempore suo, et aliud in tempore suo. Nam ad esse simul in tempore, requiritur *esse* in eodem instanti in numero, vel secundum se tota, vel secundum aliquam ex quibus sequitur ipsa esse pro eadem mensura temporis. Sicut ergo non sequitur: *Ista sunt in magno mundo et sunt simul loco*; ita non sequitur: *Ista sunt in magno tempore*; igitur, *sunt simul tempore*; sed

Answers.

1. It does not follow that all possibles are possible together, for many will never exist. As to past and future things, they exist each in their right time. Simultaneity requires two things to be at the same instant and entirely together.

As two things
in the world
are not
therefore in the
same place,

so they are not
simultaneous,
because they
both exist in
time.

Sameness of
place and
simultaneity
may, however,
be understood
in a wider
sense than
the above.

Many
possible things
are neither past,
present nor
future; for they
will never be.

What we deny
is the
simultaneity of
all things in the
same instant.

We also for the
same reason,
deny that
nothing can
begin or cease
to be.

Everything is
present to God
according to
the order of
its being,
and as only the

Eternal one
is properly in
eternity, it
follows that all
things have
their beginning
and their end.

Some assert
that there is no
'last of all
creatures', for
there is an

requiritur instans mensurare illa que sunt simul vel 2^m
suas essencias. ut contingit de motibus subitis, vel se-
cundum sua accidentia, ut contingit de modis essendi,
accidentibus instantaneis, quibus sunt omnes res tem-
porales. Sicut ergo non oportet res esse simul loco, 5
quamvis relaciones earum sint simul, sic non oportet
res esse simul tempore; et sic pretericiones aut futu-
riciones earum sunt simul, sed oportet unam vel par-
tem eius esse per locum per quem est aliud vel pars
eius. Unde Aristoteles concedit ultima contiguum esse 10
per eundem situm indivisibilem. Quandoque autem
locuntur philosophi largius de *simul*, tam tempore quam
loco. Conceditur ergo a quibusdam quod omne tempus
vel instans quod potest esse est, quia in magno tem-
pore eterno, sed non omnis substantia que potest esse 15
est, quia creditur quod multe substantie possunt esse
que non fuerunt vel erunt. Et creditur quod alius mun-
dus non potest esse; sed de hoc viderit philosophus.
Et ita conceditur quod omne quod fuit vel erit, est.
Verumtamen, quando superius negata sunt talia, hoc 20
erit ad istum sensum quod fiunt in eodem instanti.

Uterius dico quod non sequitur ex isto quod nichil
potest incipere vel desinere esse, sed potius sequitur
oppositum; et cum omnis inceptio vel desinicio que
fuit vel erit est, quia in magno tempore eterno, 25
quolibet tamen in instanti suo, una prius et alia poste-
rius. Quamvis enim omnia instancia possibilia sunt,
non tamen simul, sed sunt deo presencia, et ita pre-
sencia, et tamen unum alio prius aut posterius, secun-
dum elegantissimum ordinem. Nec ex hoc sequitur 30
quidlibet esse eternum, sed nichil novum; sed potius
oppositum. Quamvis enim omne bonum sit in eterni-
tate, nichil tamen formaliter est in eternitate nisi eter-
num. Novissimum ergo tempore est illud quod est post
omne aliud in tempore. Et sic non repugnant sed con- 35
secuntur se in deo *primum* et *novissimum*; non tamen
est recens aut senex.

Et dicitur a quibusdam quod non est dare simi-
liter novissimam vel ultimam creaturam singularem,
sicut est dare [primam], quia post omne instans vel 40

10. 9tigror^r B. 18. uider^t B. 21. etad B; *ib.* fuit B. 35. rpugt B.

38. Et B; *ib.* fin^r B. 40. f^a d^a c B; *ib.* primam *deest* B; prius *pro*
post B.

creaturam erit instans et alia creatura; quemlibet tamen eternum *a parte post* potest dici novissimum quo ad tempus, quamvis in nullo instanti. Aliquid vero est novissimum quo ad hoc instans, ut res que in ipso
 5 incipit esse; aliqua est novissima dies quo ad tempus generacionis et corrupcionis; ut dies finalis iudicii. Sed
 B161^a similiter novissimum | est solus deus, non sic quod sit inferior in ordine quam aliud, vel quod habeat *esse* vel perfeccionem accidentalem sicut partes mundi innovan-
 10 tur, sed, considerata quacunque novitate, invenietur ultra et extra illam aliquam novitatem, non secundum substantiam vel accidens absolutum, sed respectivum, cum causat omne in deo positum. Creatum est ergo secundum novas habitudines relativas, que vocantur
 15 esse accidentalia a quibusdam.

Ad 2^m dicitur quod conclusio bene concepta est concedenda. Pro quo notandum quod aliquod est necessarium absolute et aliquod ex suppositione. Absolute necessarium est, quod non potest non esse, sive
 20 sit prima veritas, sive veritas creata sine qua deus non potest esse, ut sunt 3^a et duo esse quinque, *dyametrum quadrati sensibilis non esse cometræ sue costæ*. Necessarium ex suppositione est verum pro aliquo tempore habens causam ex quo sequitur illud esse. Et non dicit
 25 quod illud sit semper; et sic omne verum contingens est necessarium, quia si aliquid fuit vel erit, tunc est verum in magno tempore vel eternitate. Et si illud est, tunc deus habet unam volicionem eternam respectu illius vel sui convertibilis, ex qua sequitur illud esse;
 30 ut si Anticristus peccabit, deus eternaliter voluit quod peccabit, vel quod peccatum suum punietur; et isto modo volicio dei eterna est causa futuricionis pene.

Ideo, pari evidencia qua passivum comburiter de necessitate naturali causata ex applicatione calidi, se-
 35 quitur omnem effectum esse necessitate supernaturali ex causacione cause eterne formaliter inferentis. Sequitur enim *determinate verum est necessarium, omne verum est determinate verum, ergo omne verum est necessarium*. Maior patet ex hoc, quia omne determinate verum est
 40 necessarium esse vel fuisse: ut patet de qualibet vera

endless succession, yet every creature can be called last at the moment it begins to be,

and the Last Day is the end of generation and corruption. God is also the last, i. e. in time, since His existence extends beyond all future time.

2. We admit the conclusion, if properly explained. There are two necessities: absolute necessity, such as $3 + 2 = 5$, or, the diagonal and the side of a square are incommensurable, or hypothetical necessity, that is true at a certain time. God has an eternal will concerning all things.

Everything is necessary by the effect of the First Cause which produces it. Everything true is determinately true, and therefore necessary;

11. a'qua novitatem B. 13. catu B. 20. cata B. 22. quadratu B;
 1b. cometar^p B. 22-23. Nctriu B. 26. nctriu B. 40. v'a B.

logica illius materie; et, si aliquid fuit vel erit, tunc ipsum est, iuxta illam viam. Ergo, si aliquid est determinate verum, necesse est ipsum esse, et per consequens est necessarium. Et minor argumenti patet ex hoc quod omne quod necesse est esse vel fuisse verum, 5 est determinate verum; sed omne verum est huiusmodi. Probatur per deduccionem ad impossibile, capiendo quod *non est necesse esse vel fuisse quod Anticristus erit*, cum hoc quod *ipse erit*. Si Anticristus erit, tunc verum est quod ipse est, et fuit, eo quod verum erit ipsum 10 esse et fuisse. Et omne quod erit est; et si est vel fuit, necesse est ipsum esse, ut proximo deductum est: ergo, si erit, necesse est ipsum esse. Et patet quod si est, necesse est eternaliter fuisse quod ipse erit. Et idem est argumentum de quolibet signando; quia si aliquod ens 15 erit, tunc per tempus futurum est verum et necessarium quod fuit; et per consequens pro eadem mensura est necessarium quod per tempus eternum illud fuit futurum. Et per consequens per illud tempus necessario est futurum. 20

Hypothetical necessity implies that the thing must exist at some period or other. But we have three sorts: 1. hypothetical eternal truths, as God's decree that Antichrist should exist, and his production; and these are above all time. Yet their existence is quite contingent. 2. Others exist for ever, 3. others for a longer or shorter period.

Omnia autem necessaria ex suppositione in hoc conveniunt quod necesse est illa pro aliqua mensura esse. Sed hoc tripliciter variatur. Nam aliquod tale necesse est esse eternum *a parte ante* et *a parte post*, ut *deum velle Anticristum esse*, et *Anticristum fore vel esse pro-* 25 *ductum*; quorum utrumque reciproce causat reliquum: primum, ut forma exemplaris, et 2^m ut materia. Nec est inconveniens, sed necessarium, aliqua reciproce causare in diverso genere causandi. Tales ergo veritates sunt supra omne tempus | ut futuriciones, pretericiones, dis- B 161 iuncciones, et noticie dei. Et tamen contingentissimum est illud esse, cum potest non esse, sed non incipere vel desinere esse. Aliquid eciam tale necesse semper esse: ut mundum et partes eius. Et aliquod necesse est esse non semper; et hoc tripliciter; et sic per omne 35 tempus aut instans in quo instanti desinit esse, vel in omni tempore post instans sui inposicionis; ut patet de istis; *hoc modo* et *hoc instans est preteritum, est futurum*, vel 3^o *quod incipiat vel desinat esse simul* ut

7. p^r twice B. 8. q, twice B. 9. cū h^c twice B. 24. app^r B;
ib. app^r B. 30. ut B. 31. not^r B. 39. esse que simul B.

res subite sine successione, ut res temporales que includuntur.

Ex istis patet quod nichil est [in]determinate verum, quia omne contingens vel est determinatum a deo, vel
 5 convertitur cum determinato a deo. Nec repugnat necessarium ex suppositione esse contingens, cum contingens sit illud quod pro aliqua mensura non est modo. Non sequitur: *pro ista mensura hoc non est*; igitur, *hoc non est*; quia impossibile est aliquid quod erit
 10 vel fuit simpliciter non esse. Quondam tamen putassem sic dicentem insanire, quia mentes iuvenum infecte, et corporalium fantasmatum mutabilitate plene, non concipiunt prioritatem et coëxistenciam eternitatis cum tempore. Et hoc facit philosophum mundum ponere coe-
 15 ternum deo, et loqui multa impossibilia. Nec sic est loquendum, nisi homo fuerit magis exercitatus in positione. Error enim huius logice facit multos errare in materia de necessitate futurorum. Putant enim aliqui quod omne futurum est absolute necessarium, forte
 20 propter prescenciam, preordinationem vel determinationem dei. Sed hoc non sequitur, cum semper potest esse, ut dicitur, quod deus non sic scivit; et tam contingens est mundum non esse vel non fuisse, quam contingens est animam istam non fore, demonstrando
 25 quamcunque animam producendam, quia potest deus (sicut quondam potuit) non producere vel produxisse istum mundum. Sed summe libere potuit hoc in eternitate. Ergo adhuc sic hoc potest. Verum non est possibile quod *posse* dei pro aliquo instanti dependat, quia
 30 tunc dependeret ab aliquo extrinseco. Et ex hoc patet quod tam necessarium est deum revelasse vel scivisse quodcunque contingens futurum, quam necessarium est me fuisse. Ideo falsum est quod Cristus potuit mentiri vel decipi, sed bene potest non dixisse, vel secundum
 35 humanitatem non fuisse. Ideo necessitas ex suppositione non excludit contingenciam ad utrumlibet; et per consequens non tollit libertatem arbitrii nec casum vel fortunam quo ad causam secundam, sed quo ad deum. Et sic errando putamus ex magna ignorancia quod
 40 futura sunt indeterminata.

There is no such thing as indeterminate truth. Hypothetical necessity is by no means contrary to contingency. We cannot say *This is not* of a thing that was or that is to be. I once thought that this opinion was madness, for I did not understand it. One must, however, be well trained before using this language; for many err, thinking that all future things are absolutely necessary. But it does not follow.

Christ could not lie, but He might not have spoken, or not have existed. The free will of man is thus saved; chance also exists for the second causes, not for God; but we, being ignorant, think that the future is undetermined.

3. determinate B.

14. phus B.

37. cam B.

38. cam B.

There are many things foreknown and fore-ordained, and many that are only foreknown, and there may be things that God does not foreknow; but whatever He foreknows, must exist hypothetically at some part or other of eternal time; and as it is impossible that anything should be eternally in the future, this thing foreknown will at a certain time become past.

This is why the Fathers say that God necessarily foreknows that which is foreknown, all things being present to Him; they do not speak of absolute necessity. *My existence is necessary*, means that it is hypothetically so; or that it necessarily follows from the existence of an eternal truth; or that, I being, it is against the ordinate power of God that I should not be.

Conceditur tamen quod multa deus prescit que non preordinat, ut peccata; et multa prescit que preordinat et predeterminat. Et tamen iam vel nunc potest esse quod nec nunc prescit, nec aliquando hoc prescivit, cum a dei sciencia sequitur illud scitum; quia ista sciencia dicit relacionem dei ad coexistenciam sciti. Verumtamen quidquid deus prescit, necessarium est illud esse pro aliquo tempore, et per consequens in tempore eterno est illud necessarium ex suppositione. Nam | si deus prescit aliquid, ipsum erit. Et cum claud- B 162^a dit contradiccione aliquid eternaliter esse futurum, distinguendo futurum contra presens, patet quod pro aliqua parte temporis eterni est illud lapsum in preteritum, et per consequens pro illa parte temporis eterni necesse est illud fuisse. Et cum necessario omne quod 15 fuit est in tempore eterno, patet quod necesse est illud esse.

Et isto modo intelligendi sunt patres nostri, qui dixerunt quod si deus quidquam prescit, necessarium est ipsum sic prescire, et illud esse, quia deo sunt 20 omnia prescencia. Sed constat quod illud dictum cum eius sententia est valde remotum a sententia que concedit quod absolute necessarium est deum prescivisse hoc futurum. Et si queritur quomodo debet exponi hec propositio, *necessarium est me esse*, dicitur quod altero 25 istorum modorum probari potest: *necessarium ex suppositione est me esse, ergo necessarium est me esse*. Et antecedens sequitur: *hec est una veritas eterna ex qua sequitur me esse; ergo antecedens respectu talis*. Vel potest sic exponi: *ego sum, et legi vel in potencia dei* 30 *ordinate repugnat me non esse; ergo necessarium ex suppositione est me esse*. Nec sequitur: *Ego sum et hoc instans est; ergo, ego sum in illo*, quia tunc quodlibet semper esset. Nec sequitur: *aliquando non sum; ergo, non sum*. Nec sequitur, *Sum in instanti presenti; ergo,* 35 *sum nunc*, cum *nunc* sit adverbium singulare. Nec sequitur: *deus nescit hoc in B instanti quod est presens; igitur, nescit hoc*, cum necessario scit omnia prescencia, preterita, et futura cum singulari sciencia absoluta.

5. 1^a cū pro cum B; ib. sciam B. 10. Nam | nam B. 11. fuisseesse B.
13. after eterni; est illud lapsum in preteritum underlined B. 31. r'pūgnat B.

Et si queratur quando necesse est talem futuricionem esse, dicitur quod quodcumque aliquod est, necesse est illud esse, ut dicit Aristoteles. Et ita, si ens est, deus scit necessario illud esse, ut in hoc instanti erit; 5 in quocumque eciam in quo est ipsum instans, necesse est illud esse. Et sic in hoc privilegiatur *scire* dei respectu sciti extrinseci ultra *scire* nostrum; quia sciencia sua est inmutabilis. Nam claudit contradiccionem ipsum esse, nisi sciat illud esse. Ideo non expectat alteracionem 10 sui, ut quidquam adiscat. Nec dicit *scire* suum habitum in ipso, sed relacionem, scilicet coexistenciam scientis ad scitum. Ideo est alterius rationis quam *scire* nostrum. Et hinc est quod homo potest privari a presciencia, quia de potencia absoluta potest fieri non prescitus, postquam 15 fuerit prescitus, sine variacione pari sciti. Sed non sic deus; quia si prescit quidquam, illa presciencia est eterna, cum non potuit incipere prescire. Nec videtur quod potest desinere prescire. Ideo non potest de non prescito fieri prescitus, sicut nec de sciente veritatem 20 aliquam, fieri eius non sciens. Possibile tamen est quod deus sit cuiuscunque veritatis corruptibilis non sciens. Vel nescius erit; veritatem quam semper scit esse non scit esse semper, cum scit eam aliquando non esse. Et per illa considerata patet responsio ad 2^m, quia non 25 sequitur.

Ad 3^m dicitur quod non sequitur *Mors mea est in tempore quo vita mea est; et sic quando vel dum vita mea est; ergo, est simul temporaliter cum vita mea;* quia, sicut dictum est quod ad hoc quod aliqua sint 30 simul tempore, requiritur quod sint pro eodem instanti vel immediata; sed ad hoc quod aliqua sint simul in loco, requiritur quod ipsa vel aliqua eorum sint in B 162^b eodem situ indivisibili, vel immediata. | Unde, quamvis eius partes temporis sunt, non tamen sic simul sunt. 35 Nec est possibile alicuius successivi eius partes simul esse; ut tempus a principio mundi usque nunc habet partem currentem a principio mundi usque ad nativitatem Cristi; et inter terminos illius partis et ipsum nunc sunt mille trecenti et 83 anni. Unde, sicut ponendo universalialia, de levi pronunciantur veritates quas 40 particulares homines reprimerent intricate, sic indubie

When must this future being exist? when it does exist, and that instant is known to God, by unchangeable knowledge, far superior to ours.

His knowledge signifies merely the coexistence of the knower and the known. A man may foreknow and then cease to foreknow a thing without any change in the object; not so God. His foreknowledge is eternal, and therefore a 'foreknown' cannot become not 'foreknown'. Yet God can know a changeable truth not to exist at a given time.

3. That my life and death must take place in the same eternal time does not prove that they are simultaneous; for we have already stated that this requires coexistence at the same instant, as it is requisite, that two things should coexist, or touch each other, to be together in space.

14. dep ata B.

15. p^{ri} B.

21. scit B.

39. mille t'centi 7 83 B.

41. r^pmit B.

The doctrine of
universals helps
much towards
a clear
comprehension
of all these
things.

A permanent
being is a
being that
continues to
exist during a
certain space of
time;
a successive
being changes
with time;
an
instantaneous
being is
measured by
the first instant
of its existence.
Time has all
its parts, but it
has them all
one after
another.

It is not true
that we have
nothing of time
but one instant,
for how can we
have an instant
without having
time?
Unless indeed
this means that
we have
nothing of time
that is *now*,
but one instant.

If two instants
unite to make
up time, why
not all instants
of the Past and
the Future?
At all these
instants, God is
certain of every
truth; which
implies that
all of them are
equally
determinate and
true.

in illa materia de levi et plane pronuncciantur veritates continentes successionem ab illis quorum animus elevatur ad considerandum eternitatem supra tempus, ubi aliquando solum ymaginantes sensibilia intricantur. Ymmo, ut communiter loquendo de successivis, pronuncciant nescii multas veritates ex quibus sequitur opinio supra dicta.

Patet ergo quod, si aliquod temporaneum vel durans per tempus sit temporale, quod non oportet deficere pro omne mensura temporali qua est, tunc ipsum est permanens. Et si sit aliquod per tempus, oportet partes succedere pro omni mensura temporali qua est illud successivum. Sed inter ista mediat subitum, cuius esse mensuratur instanti primo. Et si obicitur quod omnes partes temporis sunt, igitur in presenti instanti sunt; patet quod omnes concedentes sic tempus esse, concedunt antecedens. Et patet michi quod consequencia non valet potius quam sequitur in suo convertibili: una pars temporis fuit et alia pars temporis in eodem magno tempore eterno erit: ergo iste partes sunt in eodem instanti. Nec dubito quod repugnat aliquid esse in tempore eterno, vel esse prioritatem et posterioritatem temporis, nisi incedendo in viam veritatis predicamentalis.

Et si obicitur communis sententia quod nichil habemus de tempore nisi instans, patet quod illud vere non potest intelligi ad verba, cum claudit contradiccionem nos habere instans de tempore, nisi habeamus tempus et quotlibet partes eius. Ideo sic sane intelligitur: nichil habemus de tempore quod sit primo in ipso nunc, nisi instans; quod est verum, quia compositum ex duobus vel 3^{bus} aut quotlibet signatis instantibus non est primo in ipso nunc, cum quotlibet eius instantia sunt extra ipsum nunc. Ideo, ponendo tempus componi ex instantibus, patet quod non est ratio quare duo instantia componencia tempus sunt, quin per idem omnia instantia preterita et futura sunt; et deus est in quotlibet istorum ita certus de quocunque vero sicut est de aliquo: quod non esset, nisi ita certe esset quotlibet verum, sicut est aliquod, et per consequens ita determinate, sed non ita stabiliter.

9. ^{ti} perhaps crossed off pro sit B. 21. quia pro quod B. 23. pre-
dictas B. 31. fit^r B. 35. f^a quⁱ B.

Conceditur igitur quod omnes veritates que unquam sunt vel erunt, sunt; sed non nunc. Et sic omnes oppositiones relative, contrarie et privative, sunt; sed non nunc; ymmo in tempore eterno. Nec esset possibile
 5 aliter esse relatam oppositionem inter *prius* tempore et suum *posterius*; nec inter duo contraria, cum albedo in me et nigredo in Sorte non contrariantur. Nec inter privacionem et suum habitum, cum non possunt simul esse; nec inter contradiectoria, cum non possunt simul
 10 esse. Est ergo oppositio inter illa opposita in magno tempore eterno, de quo intelligitur quod si unum oppositorum est, tunc reliquum est. Et libet vere loqui quod omne instans est aliquod *istorum*, demonstrando omnia instantia; et aliquod istorum est nunc, et aliud
 B 163^a non est nunc, | demonstrando omnia que sunt in magno tempore eterno. Non enim valet responsio que concedit quod prioritas temporalis inter A instans et B instans est, et tamen sua extrema non sunt, quia sic prioritas est sine posterioritate, sicut nec posterioritas cum prio-
 20 ritate. Tunc autem fundaretur relacio, et dependeret tantum ab uno extremo. Sic enim loquitur communitas logicorum, concedens istam horam pro eius medio instanti habere duas medietates ex quibus componitur, ut ex partibus componentibus et concausantibus
 25 ac continuatis ad hoc instans; et tamen ille medietates non sunt, cum hoc instans sit extrinsecum utrique earum. Certum est quod talia sunt impossibilia. Ideo relinquitur quod omnes partes temporis eterni sunt, et per consequens omnia que iste partes mesurant.
 30 Et si obicitur sic: *qualitercunque erit, est; sed necessarium erit Anticristum fuisse, ergo necessarium est Anticristum fuisse*, et sic de omni veritate: dicitur concedendo conclusionem, sicut patet in descriptione Necessarii. Sed non sequitur, *Necessarium est Anticristum*
 35 *fuisse; ergo, non potest esse quin fuit*. Hoc enim solum sequitur et de absolute necessario. Et ita, si ens aliquod fuit vel erit, tunc ipsum est; et econtra. Nec sequitur: *mors mea est: ergo, ego non sum*; et sic de aliis denominationibus, que videntur inferre negacionem.
 40 Ex quo videtur quod de nullo quod fuit vel erit concedendum est similiter quod illud non est, sed *illud*

All truths are, but not all are now; all relations, oppositions, and contradictions are, but not all are now; this besides is self-evident, by the very idea of opposition.

We cannot admit that the instant A is before B, if either A or B is non-existent; for that would imply priority without posteriority, and vice versa. Every relation must depend upon two extremes, not one only. This, however, is the common doctrine of logicians, which is certainly impossible.

Objection: It will be necessary for Antichrist to have come; therefore it is necessary for him to have come; since what will be, is. Here the solution rests on the sense already mentioned, of hypothetical necessity. We must never admit that anything past or future does

26. instanti (!) B.

33. d,d,^{one} B.

36. et = erit? B.

not exist
absolutely, but
that it does
not exist in a
certain part of
time.

That *I am not*,
was never a
true
proposition.

Another
objection: God
knows me to
exist and not
to exist, so He
knows a
contradiction;
so a
contradiction
exists.
We reply that
He knows a
contradiction,
but not the
existence of a
contradiction
now.

I too know
many things
that are not, to
have been or to
be about to be
at their time.

It is urged that
God's
knowledge of
past, future and
present is
absolutely
identical;
now identity in
knowledge
argues identity
in the known.

But though the
past and the
future infer the
existence of the
thing, they are
not that
existence.

non est tunc vel tunc vel modo. Sicut non sequitur:
A non est ibi; ergo, ipsum non est; sic ista non sequi-
tur: *A non est tunc: igitur, ipsum non est*. Si ergo *non*
esse rei est, tunc illa res non fuit vel erit. Unde talis
propositio eternaliter foret falsa: *hoc non est* (demon- 5
strando rem que fuit vel erit). Nec quidquam tale
scitur non esse. Bene tamen scitur aliquid non esse
nunc, vel tunc. Nunquam ergo fuit ita quod *ego non*
sum. Oppositio igitur contradictoria non potest esse ex
parte rei, cum claudit contradiccionem unam veritatem 10
contradictam succedere alteri, eo quod contradiccio
tunc esset in re: omne quod fuit vel erit, est. Ideo
oportet cavere de negativis sine determinacione.

Et si obiatur quod deus scit quidquam scivit, et
per consequens scit me fuisse et me non fuisse, et ita 15
scit contradiccionem, et cum non scit nisi quod est,
sequitur quod contradiccio est: huic dicitur quod con-
sequencia non valet, sed antecedens concedendum est;
quia omne quod deus scivit, fuit, et per consequens
est, et ultra sequitur quod deus scit illud, sed non scit 20
illud esse nunc, quamvis nunc scit illud esse. Sicut
enim tendit omne quod fuit vel erit esse in tempore
suo, sic scit omne tale esse, et aliquando per conse-
quens scit illud esse. Ymmo sic scio ego diem iudicii
esse. Et multa olim horum corrupta scio nunc esse in 25
tempore suo, sed nichil scit illa esse nunc. Deus autem
nunquam scivit me non esse, quamvis omnem creaturam
pro aliqua mensura scivit non esse.

Sed si argumentatur ex hoc quod eadem sciencia
scit deus fore rem qua scit rem fuisse vel esse, quia 30
idem est sciens invariatur; et idem est scitum: ergo,
eadem est sciencia (Consequencia patet de homine, et
per consequens evidencius de deo. Et minor patet ex
hoc quod omne *fuisse* vel *fore* rei est eius *esse*, cum
claudit contradiccionem *fuisse* vel *fore* rei existere, nisi 35
eius *esse* sit ut conceditur): hic videtur michi | quod B 163^b
fuisse vel *fore* rei, cum sit sempiternum, et res illa
temporalis, valde differt ab *esse* rei. Negatur: "hoc in-
fert *esse* rei"; ergo "est illud esse"; quia tunc omnis

1. tt ul tt B.

2. ita B.

7. scit' B.

11. e^o; ib. g^odicto B.

12. essent B.

14. fcuit B.

22. t^od^o B.

26. scit B.

36. cuius? B;

ib. cefit ut gr B.

38. Ne^r B.

causa esset suum causatum. Sed de sciencia dei tripliciter contingit loqui; vel formaliter, ut dicit relacionem in deo, et sic est accidens sibi prius naturaliter, sed ponens scita; vel ut dicit habitum vel actum elicited; God's knowledge can be considered formally, expressing a relation in God, which posits the thing known, or as an act, or as implying the cognitive subject, and in this last sense the knowledge is no more varied by the variation of the object than light is by the removing of that which it shines upon.
 5 et sic non est sciencia essencie divine; vel 3^o, ut dicit substantiam scientem, et sic manet necessario eadem sciencia dei, non potius variata propter variacionem rei, quam variatur lux propter hoc quod illuminat manum et post aliud succedens in eodem situ post
 10 manus absenciam. Et ita dicitur a sapientibus quod eadem est fides secundum substantiam credencium rei futuricionem, que est credencium eius presenciam vel pretericionem, quia substantia fidei est de cuius futuro pretericio preedit, et *esse* subsequitur, et pretericio postrema.
 15 Sicut eadem est substantia noti et visionis qua cognoscuntur membra maligna et antiqua ex tempore alterata, et membra parva et tenella tempore precedencia. Accipiendo ergo fidem pro isto credito omnis credens futuricionem rei vel eius pretericionem, credit *esse* rei
 20 in tempore eterno, quamvis non nunc.

Et ulterius obicitur quod sicut ex dictis sequitur de hoc, *erit vel fuit tunc est*: sic econtra, *si est, tunc erit et fuit*; et per consequens *hoc instans est, erit, et fuit*; It may be said that if what is future is, what is, is future and past; this would cause great confusion and mix up all the tenses; God existing in the future, knows the present as past, and the future too.
 25 quod nimis est confusivum dicere, cum tunc non esset differentia inter tempore verborum. Et consequencia patet ex hoc quod, si aliquod instans est, tunc deus in tempore futuro scit illud fuisse, et in eternitate scit illud fore. Et sequitur: *deus scit hoc fuisse*, igitur, *hoc erit*, nam propositio vera significat *hoc fuisse*, et ita
 30 *est; ergo quod hoc fuit*.

Hic dico quod videtur michi conclusionem esse concedendam de quolibet quod est in parte temporis; sed non sequitur formaliter de alio, cum *esse* sit prius naturaliter quam *fore* vel *fuisse*. Et ita conceditur omne
 35 tempus presens esse preteritum et futurum, sed non respectu eiusdem instantis. Unde in eternitate, *esse* non est formaliter *fore* vel *fuisse*; sed totum est ibi *esse* et presenciam erit. Hinc negant quidam quod deus prescit vel scivit aliquid, et hinc 2^m grammaticos forte
 40 ista obliqua verba sunt, et tunc non realiter formantur ab hoc verbo *sum*, sed a talibus verbis *fuo*, *fuis*, *ero*,
 I do not object to this conclusion so far as it regards those things that take up a part of time, but the present is not past and future relatively to the same instant: In eternity all is present, there is no future, no past. Some deny God's prescience seeing all things

as present; and *eris*, que sunt adiectiva connotancia pretericionem et in fact futuricionem in tempore, valde dispariter a verbo substantivo; ideo argumentatur ab inferiore ad suum superius, dum sic argumentatur: *Ego fui vel ero; ergo, ego sum.* 5

The authors say that all truth is in eternity, as the object of Divine knowledge, but things contingent exist otherwise in time; which may mean that the eternal archetypes of things are in God, and that creatures are produced in time according to them. Unde nota quod auctores ponunt omne verum in eternitate, cum sciencia dei terminata ad ipsum. Et, ut sic, est omne verum eternum, est necessarium et inevitabile. Sed aliud *esse* habent contingencia in tempore. Illud autem potest habere sanum sensum, videlicet quod 10 in eternitate sunt rationes ydeales, que ponunt tales res esse in tempore suo; et secundum pretericionem causalem, concedunt auctores illas vias racionaliter esse res productas. Videtur tamen michi quod nichil est formaliter in eternitate, nisi quod est quodammodo 15 eternum, et ita futuricio et sciencia dei est in eternitate, et presencia sic est in tempore; et non sic sed aliter in eternitate.

It is objected that white is black, and every contrary every other. Et ulterius videtur sequi quod album est nigrum, vivum mortuum, et sic de quotlibet oppositis, quia sequitur: *hoc est vivum | et hoc est mortuum: igitur vivum est mortuum.* B 164^a

A two-fold answer. 1. The conclusion is of no more value than the argument. Et sic de quibuscunque oppositis. Hic dicitur dupliciter. Primo, non sequitur conclusio nec valet argumentum factum pro eius probacione. Unde, quando- 25 cunque in una kathegorica affirmatur predicatum de subiecto, hoc semper est intelligendum pro eadem mensura duracionis; sed quandoque seorsum in diversis affirmacionibus sic asseritur, hoc potest esse pro diversis mensuris. Ideo oportet capere in minori quod *hoc sit mortuum* pro eadem mensura pro qua *hoc est vivum*. Et tunc sequitur conclusio. Et per hoc tolluntur quotlibet deducciones in quibus concluditur oppositum de opposito. Et per idem notandum est quod aliud sit *hoc esse album et nigrum* de copulato extremo, quam- 35 vis aliquid sit *hoc esse album*, et illud idem sit *hoc esse nigrum*. Ex istis patet quod repugnat scire *hoc esse non album* aut *non senem*, etsi hoc vel fuit erit senex vel album. Ex quo patet quod opposicio contraria vel privativa non infert oppositum contradictorium, nisi 40

9. h₃ 9ti^a B. 12. p̄tūcom B. 13. rōnet¹ c̄ B. 23—24. dr d'r B.
34. scit B. 36. scit B; ib. scit B. 40. in fit (sic) B.

cum limitacione ad eandem mensuram, ut sic argumentando: *hoc est album, et nullum album est nigrum: et igitur, hoc non est nigrum pro eadem mensura pro qua est album*; et ita de similibus est dicendum.

- 5 Ex istis patet quod non repugnat aliquid moveri ad denominationem quam ipsum [non] habet et a denominatione quam [habet,] sed non pro eadem mensura temporis pro qua ipsum movetur ad illam vel ab illa; ut moveor ad sanitatem, et sum sanus illa sanitate, sed
10 non pro eadem mensura temporis pro qua moveor ad illam, sed posteriori. Ideo ista posicio non destruit, sed ponit omnem motum cum suis terminis a quibus et ad quos. Nec esset aliter possibile motum specificari vel
15 sunt termini infiniti, ut: *non esse illius albi est vel fuit tunc vel tunc.*

- Sed 2^o probabiliter conceduntur omnes tales predi-
caciones oppositorum positivorum pro diversis mensuris,
sed non contradictorium; ut quod *ceci vident, claudi*
20 *ambulant, mortui resurgunt*, etc. quia qui sunt huiusmodi pro preterito sunt huiusmodi pro tempore futuro; et hoc potest esse ad alium sensum sine miraculo, et ita invenitur sequela scripturam loqui. Et ita sum triennis et senior quam triennis, et iunior quam triennis, sed non quam est alius qui est triennis. Sum enim
25 senior quam triennis, quia pro hoc instanti. Et assumitur sic: hoc instans intrinsecum terminat senium meum, quod est maius quam aliquod senium trienne. Et ita resolvenda sunt omnia talia in *per se*.

- 30 Sed ulterius argumentatur quod necessarium antecedit ad contingens ad utrumlibet; et per idem, ex contingenti sequitur impossibile. Sequitur enim ad *deum scire Anticristum fore, ipsum Anticristum esse*; sed antecedens est necessarium, cum sit veritas eterna que non
35 potest incipere vel corrumpi. Et per consequens, vel est falsum vel contingens ad utrumlibet de presenti. Et per idem sequitur: *Deus scit me non fuisse; ergo, ego non fui*; sed antecedens est necessarium pro tempore preterito precedente *esse* meum, cum sequitur: *deus*
40 *scivit assumptum esse verum, me non fuisse: ergo, deus*

A thing may be white and black, but the contradiction consists in its being so at the same time. This theory does not contradict the idea of change; on the contrary, it affirms change with all its elements.

2. On the other hand, we may admit the argument and grant that these oppositions coexist, but in different parts of time, so that they do not really contradict each other. I am three years old, and older than three, and younger than three; but not younger than one who is just three years old. Another objection: A thing absolutely contingent follows from a necessary truth: which is absurd. For instance, God's knowledge that Antichrist will exist, and Antichrist's existence. Or, God knows that I did not exist;

4. e't B.
29. in p se B.

6. non *deest* B.
40. *anu* B; meum *pro* verum B.

7. habet *deest* B.

27. *as* B; *ib.* *seni* B.

therefore *I did*
not exist:
which is false.

scit me non fuisse; et antecedens constat esse necessarium. Et quod consequens sit impossibile, patet ex hoc, quia suum oppositum est determinate verum de preterito, et omne tale est necessarium, et quod consequens sit impossibile. 5

Most of the
philosophers
whom I follow
admit the
conclusion
verbally.

But the
antecedent
cannot be true
at the moment
when the
consequence
is good.

*God knows that
Antichrist will
be;* therefore
Antichrist is,
is true, but the
consequence
exists only at
a certain time,
and not when
Antichrist's
futurition
is without his
present
existence.

A consequence
may also be
true, and yet
not true in any
finite time; as:
*God wills that
all the instants
of time be;*
therefore *they
are;*

which cannot
at any moment
be true.

Thus it is not
necessary that
the thing
affirmed in the
consequent
should exist
actually, for
the conclusion
to be true.

It does not
follow, if I
know the
resurrection,
that the
resurrection
is now.

Hic dico quod precipui philosophi quos ego sequor in ista materia concesserunt conclusionem in terminis. Nec aliter videtur, capta tota multitudine veritatum continuancium, quomodo ipsa possent causari ab alia completa causa priori. Verumtamen hoc est impossi- 10
bile quod pro eadem mensura qua consequentia est bona, et antecedens est verum, | et consequens non. B 164^b
Nam data tali consequentia: *Deus scit Anticristum fore:*
ergo, Anticristus est, realis consequentia non est nisi
in tempore: ergo, est consequens cum antecedente. Et 15
ita in omni tali consequentia, consequens est ita verum
sicut suum antecedens. Et ita illud consequens est
necessarium et contingens, sicut antecedens est con-
tingens et necessarium. Nec est consequentia pro in-
stanti quo Anticristum *fore* est sine eius *esse;* quia con- 20
sequentia est habitudo relativa causati ad causatum
eiusdem. Unde aliqua est talis consequentia, quam sim-
pliciter est esse impossibile in tempore finito; ut patet
de tali consequentia: *Deus vult ista esse: ergo, ista
sunt,* demonstrando omnia instancia temporis eterni 25
cuius antecedens et consequens claudit contradiccionem
pro aliquo instanti esse vera. Ista ergo consequentia,
cum suis extremis, est primo in tempore eterno, et
respectu cuiuscunque temporis est dare talem conse-
quenciam et quotlibet alias veritates. Nec est incon- 30
veniens veritatem connexionem manere, et quantum-
libet tempus, et posicionem antecedentis manere con-
tinue veram posicionem consequentis, manente contin-
gencia vera sine existencia sui significati; ut hic: *dies
iudicii est futura: ergo, illa dies est.* 35

Nota tamen quod non oportet, etsi signum sit verum pro aliquo instanti, quod suum significatum sit pro illa instanti. Sed satis est quod sit pro alia mensura, sicut non sequitur: *hic scio hoc: igitur, hic est hoc.* Ista non sequitur: *scio nunc resurrectionem* 40
mortuorum: ergo, nunc est resurrectio mortuorum. Unde

- patet quod, formato tali signo eterno: *deus scit omnia instantia fore: ergo, illa sunt*, quod tam antecedens quam consequens foret eternaliter verum. Non tamen bene est distinguere inter veritatem connexionis, que est condicionalis veritas, non ponens antecedens vel consequens ex parte rei, et consequentiam ex parte rei. Stat enim conclusionem veritatis ad suum antecedens esse pro una mensura, pro qua suum antecedens non est, et econtra, cum temporale sequitur ex eterno, et econtra.
- 10 Nec est verum quod deus unquam scivit vel scit me non fuisse, sicut nunquam fuit ita quod ego non fui; sed semper est ita quod ego non fui in isto vel in isto instanti. Unde non sequitur: *Hoc in quolibet instanti non est; igitur, hoc non est*, demonstrando multitudinem
- 15 omnium instancium, vel quodcunque aliud quod non potest esse in instanti. Nec sequitur: *in hoc instanti est ita quod hoc est vel non est: sed nunc non est ita quod hoc est: ergo, nunc est ita quod hoc non est*; sicut eternaliter ante primum instans mundi fuit ita quod
- 20 *hoc est vel quod hoc non est*. Et tamen nec fuit ita ante hoc idem instans quod *hoc est*, nec ante illud fuit ita quod *hoc non est*: sicut in multis locis neutrum contradictorium est, sic in multis temporibus, ut in quolibet locis, *nec est ita quod tu es nec est ita quod tu*
- 25 *non es*. Et ita in multis instantibus; quia aliter quidlibet replet orbem terrarum, sicut deus. Et conformiter non sequitur: *ante primum instans mundi fuit hoc esse vel hoc non esse; sed tunc non fuit hoc esse, ergo tunc fuit hoc non esse*; quia si tunc fuit hoc non esse,
- 30 et omne quod fuit est, sequitur quod est hoc non esse; potissime cum illa repugnant: *hoc fore et hoc non esse*; et *hoc fore* fuit eternum ex omnibus cum talibus dictis. Unde sequitur cum determinacione quod *vel est hoc esse nunc, vel est hoc non esse modo*.
- 35 Sed ulterius dubitatur si antecedens eternum eternaliter causat suum consequens, ita quod, *si deus nunc vult A esse, nunc causat A*. Quo dato, videtur quidlibet esse eternum, cum omnis rei causa sit eterna, et causa completa simul est et non est cum suo causato;
- 40 quia aliter consequentia bene alias posset esse sine dato consequente, et tunc videtur quod deus eternaliter

And God's knowledge, and the consequent existence, of all the instants of time, is true in eternity.

The conclusion may be true at a time when the antecedent is not true, and vice versa.

God never knew that I did not exist, but that I did not exist at such or such a time.

Other examples.

Whether an eternal antecedent causes its consequent eternally.

If so, everything would be eternal, since God is the cause of all, and His will is eternal

All things are eternal in God's knowledge; but it does not follow that they exist in the same way as they are known, i. e. eternally, only that they exist at the right time.

So also of God's will, love, and ordering act.

These acts precede those of making, which are extrinsic to God.

Some philosophers even posit a two-fold act of His will. Note which verbs denote the external operation of God, and which the internal act. The latter may be and are without their temporal results, which, however, they must produce; for to be without signifies not to have for a certain period, not for ever.

Whether a cause produces its effect before that effect exists.

gignit omnem creaturam, cum pro quolibet instanti causat, faciendo omne scibile. Nec videtur ratio quare pro hoc instanti deus scit hoc esse quod per mille annos post hoc instans non est, quin per idem ordinat et scit hoc esse, cum sua ordinacio sit sua 5 faccio. Hic dico quod | precipui philosophi concedunt B 165^a omnia esse eterna in noticia et sciencia dei, quod non aliter intelligendo adhuc addit, nisi quod illa fuerint eternaliter ordinata vel scita. Modo non sequitur: *hoc est volitum a deo scitum, vel ordinatum pro ista men- 10 sura: ergo, hoc est pro ista mensura*. Sed bene sequitur ex dato antecedente quod *hoc est in tempore suo*, ita quod ista sunt ampliata, sicut termini actuum illis correspondentes. Nec sequitur: *deus vult hoc, amat hoc, ordinat hoc, pro ista mensura* (quia *intelligere* dei re- 15 spectu cuiuscunque singularis extra est prius quam suum *velle*, cum *intelligere* sit absolute necessarium): *ergo causat hoc, facit hoc, vel scit hoc pro ista mensura*. Sed *velle, diligere, ordinare, et cognoscere* etc., que sunt intrinseca deo, precedunt suum *facere* ad extra. 20 Ideo dixerunt subtiles philosophi quod est dare actum executivum voluntatis divine, distinctum ab illa volitione, sicut temporale posterius in natura distingwitur a suo priori eterno.

Ideo oportet notare que verba ponunt pro eadem 25 mensura rem ad extra, et que non; ut *operare* dei, *efficere* [quod] suum est, *formare, movere* et huiusmodi sunt temporalia. Sed *scire* vel *cognoscere, amare* vel *ordinare* etc. sunt eterna; et illa possunt esse et sunt sine temporalibus, que formaliter secuntur ex illis; 30 non tamen possunt esse cum hoc quod reliqua non sint. Unde satis est quod A sit pro aliqua mensura pro qua non habet B, ad hoc quod sit sine B. Unde beatus Petrus est sine peccato pro mensura sui certitudinis, et tamen est in peccato pro mensura sue nega- 35 tionis, et ita nunc scio B Petrum esse in peccato, sed non pro nunc; et ita credo quod scio me esse beatum in tempore suo; ymmo credo quod nunc scio me esse beatum tunc.

Sed ulterius dubitatur si causans causat suum cau- 40 satum antequam causatum sit ipsum. Et videtur michi

13. terminum B.
34—35. ot'itum¹³ B.

18. fit' pro scit B.

27. quod deest.

31. r'linq¹³ B.

quod omne causans prius origine natura vel tempore causat suum causatum, antequam ipsum sit, sed in supposito causantis. Si causans pro aliquo instanti causat, vel est causa eorum, tunc illa sunt pro eodem instanti.

- 5 Unde quamvis deus sit causa Anticristi, non tamen pro hoc instanti; et sic concedi posset quod in hoc instanti est illud quod causat in alio instanti; et sic est causa in alio instanti, quamvis non in hoc instanti causat in alio instanti. Et ita conceditur, ut prius, quod consequentia ex parte rei non est nisi pro mensura in qua est illud consequens. Et ita antecedens est pro mensura pro qua non est antecedens respectu dati consequentis, quia non est antecedens, nisi quando est antecedenencia. Et sic patet quod tempus est in instanti, 15 non ut in eius adequata mensura, sed est in se primo, cum per se sit diuturnum et in instanti, ut in casu; et in eodem instanti est unum instans aliud a reliquo. Nec sequitur quod in eodem instanti reliquum sit, nec quod pro illo instanti sit unum aliud a reliquo, quia 20 tunc in illo instanti esset illa alietas.

- Ex quo patet quod infinita sunt, quorum nullum potest esse per tempus vel instans. Illud patet de veritatibus talibus eternis, primum instans erit, generacio mundi erit, etc. Patet etiam de talibus: *Ista omnia sunt,* 25 quibuscunque demonstratis; patet etiam de talibus: *Iste motus est difformis, quo ad tempus alio gradu usque ad B;* et ita de difformitate motus, cuius prima medietas est uniformis ut 4, et alia medietas succedens uniformis ut 8, et generaliter de omni motu remisso qui 30 non est vere continuus generaliter; et per consequens de omni sono vel oracione. Nam manifestum est philosophi 165^b sophis quod oracio est | quantitas discreta, successiva, in qua sunt quotlibet intercisiones, eo quod tremor est motus causatus ex reflexione, qui non potest esse 35 motus continuus, ex 6^o phisicorum. Ideo generaliter decipitur sensus de continuitate soni, sicut visus de continuitate situacionis [et] coloris: ut patet de tunc circumducta in nocte, et troco cuius basis est discolor circumducto in limine, ut declarat Boecius in principiiis musicæ.

It does; neither in time, nor in nature, or by origin; but cause, *qua* cause, and effect are simultaneous.

God is Antichrist's cause, but not now; and we may say that what causes at one instant exists at another.

So a consequence exists only when the consequent exists, and the antecedent exists before it is properly an antecedent.

There are infinite things that are neither temporal nor instantaneous, as, v. g. eternal truths, collective propositions, propositions about varied motion,

sound,

and speech;

which last is an intermittent and varied movement, in which our ears are deluded, as our eyes are in other cases.

2—3. suppo B. 6. pt concedi po; B. 16. ca² = causa? B.

31—32. phi^s = physici (?) B. 37. et deest B; ib. tione B. 39. line B.

Here I wonder
how modern
writers can pay
so little heed to
their own
expressions on
these subjects,
which imply
that many
things exist
which are not
present.
If not,
movement
could have no
beginning nor
end; design in
nature, merit
and demerit,
would perish;
theft and
hanging, work
and health,
father and son,
privation and
production,
would no more
be causes and
effects.
And nothing
could happen in
which there was
a *before* and
an *afterwards*.

Blessed be the
Lord, who hath
enlightened my
mind, so that
I escape these
straits!
That God is
certain as to
future things
makes no
difficulty; for
there is both
contingency
and necessity.
I am quite free
not to act thus
or thus,
but this does
not exclude
hypothetical,
only absolute,
violent, or
natural
necessity.

Et hic admiror quomodo moderni non advertunt ad locuciones suas de prioritatem et posterioritate temporis, de difformitate motus quo ad tempus (et sic de aliis), de comparacionibus includentibus multa esse extra presens. Aliter enim non esset possibile motum successivum vel subitum terminari, vel habere terminum a quo vel terminum ad quem, vel naturam agere propter finem accionis sue, nec meritum vel demeritum esse causam pene vel premii; nec furtum potest esse causa suspensionis, nec labor causa sanitatis, nec pater causa filii, nec privacio principium producendi, nec mors vel fons vite aliis potest esse; nec aliquis potest ambulare vel dicere argumentum, nec aliquid potest esse ante tempus vel post aliud instans; et sic omnia incipiunt et desunt esse, cum non erit tempus amplius. Si enim A erit post hoc, tunc possibile est A esse post hoc, et tunc possibile est anterioritatem vel posterioritatem esse, et sic prioritatem et posterioritatem. Sequitur enim: *ego sum ante B, ergo sum prius temporaliter quam B*. Et ita de *post*, quia aliter non esset possibile quod unum succedat vel precedat temporaliter aliud, cum pro mensura pro qua sunt simul, neutrum est temporaliter post vel ante reliquum. Non enim concedendum est quod deus facit aliqua duo incipere esse; et si cognosceret unum posse differre a reliquo, vel alterum illorum ordinate posse fieri, ipse non sic faceret. Benedictus sit ergo dominus temporis, qui illuminat mentem meam supra tempus ad evadendum libere omnes istas angustias spiritus in loquendo.

Nec movet difficultas de assercione dei respectu futurorum, quod utrolibet est sibi causata certitudo, et ita simul in unum contingencia et necessitas. Ego enim liberrime possum non fecisse quemcunque actum, ymmo non esse pro nunc, cum omne unum quod non est absolute necessarium est contingens ad utrumlibet et necessarium ex suppositione. Si ergo esset absolute necessarium omnia futura evenire, vel necessitate coactionis, vel 3^o necessitate naturali excludente libertatem, periret meritum. Modo est necessarium meritum, consiliacionem, casum et fortunam esse: ymo potenciam

9. nō pt' B.

13. am pro argumentum B.

20. B deest B.

30. aff, conc B.

31. cāta B.

a domino esse cuiuslibet creature; et hoc est de lege que potest esse ordinata: *talia possunt contingere*; legi tamen ordinate, que est eterna et incorruptibilis, repugnat talia non esse. Et si queratur quid sit necessitas

5 ad peccandum, potest dici quod non deus, sed libertas arbitrii. Verumtamen, sicut est temporale bene placitum deo, est reducibile ad eius voluntatem eternam, cuius non est dare causam formaliter inferentem; sic omne preteritum est reducibile ad voluntatem causatam, cuius

10 sequela non est causa substantialis ulterior, quamvis B 166^a deus | sit causa veritatis connexionis. Et ita vult quemlibet actum; sed non placet illi disformitas eius, que est peccatum. Vult ergo odium, sed non sic odere.

Sed postremo obicitur quod tota difficultas stat in 15 abusione verborum de presenti pro tempore preterito et futuro; in quo fundamento non est difficultas, sed voluntaria deviacio a grammatica, ut patet ex concedendis a sic opiniantibus. Nam querendo quid facit Adam, Anticristus vel quicumque alius, diceretur quod

20 ipse incipit esse, desinit esse, et breviter facit quidquid fiat vel faciet. Et tamen est mortuus vel est generandus. Negantur eciam a sic dicentibus syllogismi expositorii, et rectissimi syllogismi in quacunque figura; ut sic argumentando: *iste est albus* et *iste est niger*; igitur

25 *album est nigrum*; *omnis homo est mortuus*, *omnis homo est vivus*; ergo *omnis homo vivus est mortuus* vel *omnis homo mortuus est vivus*. Nullum album est nigrum; *omnis homo est albus*; igitur *nullus homo est niger*. *Omnis homo syloyzat*; *aliquis homo est mutus*; igitur

30 *aliquis homo mutus syloyzat*. Et sic de similibus infinitis. Sequitur eciam quod a privacione ad habitum possibilis est regressio; ut tam facile est me servari ne peccavero postquam peccavi, sicut ante fuit; et tam faciliter possum remediare quamcunque indisposicionem

35 sicut unquam potui. Sequitur eciam quod filius meus ex michi dubio esset sapiencior me, cum tamen sim certus quod non habui filium. Nam si filius meus erit sapiencior me, ipse est sapiencior me. Sed ex michi dubio ipse erit sapiencior me: igitur ex michi dubio ipse

40 est sapiencior me. Et per idem ipse est senior me in

It asked what causes the necessity of sin, I reply: not God but our free-will.

Yet as the fact of sin is pleasing to God, it depends on His eternal will;

for God wills every act that takes place, but not its wickedness.

It is objected lastly that I misuse the present for the past and the future,

which is merely ungrammatical. What is Adam doing? he is beginning to exist. Yet he is dead.

This theory, moreover, leads us to deny all expository syllogisms, and many others;

to affirm that it is as easy to keep from sin after sin as before;

that, not having a son, I may think that my son is wiser than I, since he will perhaps be so;

or even that he is older than I;

1. adom̃io B. 11. vocat B. 12. michi B. 27. vivus est mortuus B. 36. exm B. 38. exm' B. 39. exm' B.

unless I wish
to contradict
all that is here
laid down.

I reply that a
logician
must adapt his
speech to his
audience and to
circumstances;

so, when
speaking of
transitory and
particular
things, he will
admit that
the present is
and the
past is not,
nor the future;

meaning *not*
now; as, when
a common
person, asked
if he has heard

Mass, says,
"No", meaning
not to-day.

But when he
has to deal with
philosophers
on abstruse
questions, he
must speak of
all the parts of
time as being
present,

abstracting from
the signification
of *present* that
of any

particular time.
Some grant this
extension only
when speaking
of God; all is

present to God,
they say,
but that does
not give it
existence.

This I cannot
admit.

When I say:
this or that is
present to God,
I abstract from
the idea of
actual existence;

I do no more
when I say:
This or that is.

Some admit
that a
movement past
or future, is;

casu, vel alias non valet expositio comparativi gradus,
nec expositio de *differt* et *aliud*, nec aliqua expositio
supra dicta, continens diversitatem temporis.

Hic dico quod loycus debet aptare locucionem suam
secundum exigenciam auditorii, pro loco, et tempore; 5
ut puta, quando queritur de rebus transmutabilibus
quomodo se habent ad circumstancias et actus parti-
culares, tunc dicendum est particulariter, considerando
hoc instans in quo sumus; et secundum hoc aptanda
sunt verba, concedenda aliqua esse et non fuisse, ut 10
illa que nunc sunt subita, alia fuisse et non esse, vel
fore, subtiliando ipsa non esse nunc. Sic enim locuntur
plebei, quando queritur si comederit vel audierit missam,
dicunt quod non, restringendo questionem ad illud
directe; et ad istum sensum locutus sum usque ad 15
istud capitulum. Quando vero locutum est cum ab-
stractis philosophis secundum consideraciones univer-
sales, transcendendo omnia corruptibilia, loquendum
est de tempore et suis partibus quibuscunque, cum om-
nibus mensuratis vel existentibus in illis, ac si essent 20
presencia; quod non potest concipi nisi acie intellectus,
considerantis duracionem eternitatis supra tempus, et
abstrahentis verbum figure presentis temporis a conno-
tacione particulari cuiuscunque temporis: quod sine
dubio singulariter grammatici rare sciencie swadent ad 25
faciendum.

Unde aliqui concedunt talia, solum ampliantes ver-
bum quando de deo locuntur; ut deo dicunt omnia
merita et demerita, preterita et futura esse presencia.
Et quando queritur utrum sunt vel non sunt, dicunt 30
quod non sunt, sed sunt quo ad deum; sed hoc non
infert illa esse. Hoc tamen videtur michi preter raci-
onem locutum. Ideo, sicut ampliando intelligo ! verbum B 166^b
sub figura presentis temporis, simpliciter sine conno-
tacione particulari temporis, quando dico quod deus 35
cognoscit, facit, vel habet sibi ista presencia; sic,
quando similiter profero quod *ista sunt*, intelligo verbum
ut tempus. Nec est michi vis concedere cum verbis
adiectivis tales pretericiones, aut solum cum verbis
substantivis et verbalibus veritatibus adiectivorum. 40

Aliquis tamen probabiliter concederet quod omnis
motus qui fuit vel erit, est; sed negaret omne quod

movebatur aut movebitur, moveri: ita quod non sequitur: *locutio Sortis est: ergo, Sortes loquitur*, propter equivocacionem connotacionis temporis per verbum. Sed non est veritas in ista diversitate. Quando vero non
 5 sic ampliavi verbum, bene negavi aliqua deo esse presentia, nisi ea que sunt, sed concessi pretericiones et futuriciones rerum esse deo presentes, et ille faciunt bona vel mala; et ista sententia est satis vera in sensu suo.

10 Ulterius dicitur quod non negans Adam esse, et dubitans dicit de Anticristo si est, non contradicit concedenti utrumque illorum esse pro tempore eterno, et non simul et semel. Et illa concedens quod ipse facit omnes
 15 actus diffformes quos unquam fecit, referendo ad tempus preteritum, quod est pars temporis eterni, non contradicit neganti quod ipse facit aliquod tale, restringendo verbum ad ipsum *nunc*.

Nec sequitur ex ista opinione aliquem syllogismum esse negandum, quin potius syllogismos concedendos
 20 esse quos multi negant; ut patet de conclusionibus concedendis de oppositis predicatis de seipsis, sed non simul et semel. Et est propinquissima locutio quod deus est non solum ante generacionem Abrahe, sed
 25 etiam antequam fieret, et ante racionem stabilitatis sue, quod est eternum. Et ita hodie et cras Christus vivit, et 3^a die consummatur. Ymmo, sicut credo carnis resurrectionem, Cristi mortem quam aliqui crediderant, et per consequens cum actus fidei non sit falsus, sequitur fidem creditivam esse veram; et ita deus diligit
 30 et vult omnia bona que erunt vel fuerunt, et per consequens cum [non] vult non ens, sequitur omnia talia esse. Et ita omne tempus, maius vel minus, componitur ex omnibus suis partibus. Et tunc aliquod ex centum annis, aliquod ex 4 annis, erit aliquod ex quotlibet
 35 instantibus. Nec sequitur hominem esse multiplicatum per diversa loca, etsi ille sit per diversa loca distancia, quia requiritur quod simul et semel sic esset, nec sequitur: *ista sunt: igitur sunt simul tempore*.

Sed ulterius dicitur quod non sequitur omnem regressionem esse possibilem a privacione ad habitum, eo

but deny that
 what was
 moved is
 moved;
 but this is not
 true.

There is no
 real
 contradiction
 between one
 who does not
 deny Adam and
 doubts of
 Antichrist, and
 one who affirms
 that they exist,
 each in his
 time,
 nor between
 one who says
 he does all the
 bad actions
 he ever
 committed,
 and one who
 denies it,
 restricting his
 meaning to *now*.
 I deny no
 syllogism; on
 the contrary,
 I admit
 syllogisms that
 others deny.
 I admit that
 God is before
 Abraham's
 existence, and
 even before his
 eternal election.

All time is
 made up of
 parts;
 100 years,
 4 years, are all
 made up of
 instants.

11. dicitur B.

11. antecristum vel de B.

24. c t, pro et B.

26. gsumat^r B.28. i⁹ B.

31. non deest B.

33. exce'tu a^{uis} B.34. a^{uis} B.

to a former
quality is
always possible.
A return implies
that the
quality has
been lost.
We may take
thought about
things past,
but not as past
things.

quod regressio ponit habitum fuisse, et privacionem postmodum fuisse. Unde non sequitur: *Ego possum habere istam formam et careo ista forma: ergo possum habere istam formam postquam carui ista forma.* Hoc enim ampliatur hoc nomen, *regressio*. Nec obest consiliari de preteritis, sed non pro tempore pro quo sunt preterita; nec bene aliter admitteretur quod sint futura talia, aut quod sumus ante hoc instans, demonstrando ista que de facto sunt preterita, si illa essent similiter impossibilia. Possum ergo cavere de multis talibus de potencia absoluta.

Nor is my son
perhaps wiser
than I if I have
no certitude
that I shall
have one; in
the other case
it is possible.
He may be
older than I if
he lives
100 years and
I then return
to life;
otherwise it
does not follow.

Nec sequitur quod filius meus ex michi dubio sit sapiencior me, cum non habeam evidenciam quod ego habebo filium. Verum cum hoc est satis possibile. Nec sequitur a pari quod sit senior | me. Illud tamen est possibile, posito quod vivat centum annis, et ego sum noviter suscitatus. Et sic de quotlibet conclusionibus, in quibus oportet diligenter cavere de negacionibus et mensuris cum quibus est verificacio. Ut: *ego scio quando dies iudicii est*, sed adhuc ignoro hoc nunc, cum scio illum diem esse; quia credo absque contraria formidine, et iam est, sed non credo istum esse nunc.

The others say
that time
consists of
parts which
do not exist,
that a vocal
proposition is
a proposition,
but has no
being; that the
sacramental
words are not
true until
completed;
that there is
nothing
successive;
that things
move and last
without motion
or duration.
They cannot
account for
age, which
becomes greater
and greater by
succession,
and can neither
be increased
nor diminished.

Alii vero comemorant verba sua sine fine, concedentes quotlibet impossibilia et adhuc vult esse; ut alii concedunt tempus et alia successiva componi ex partibus que non sunt. Et proposicionem vocalem concedunt esse proposicionem, sed non esse. Alii autem dicunt quod hec propositio vocalis: *hoc est corpus meum*, non est vera antequam, complecione residui proposicionis, foret Cristus sacramentaliter in hostia. Alii dicunt quod non est possibile successivum esse vel aliquid moveri. Alii dicunt quod res moventur sine motu et durant sine duracione; et sic de multis quibuscunque impossibilibus, a quibus deus liberavit me sic loquendo. Non scirem enim aliter etatem meam, vel antiquitatem aliam sustinere; quia omnis talis est magna successive, et per consequens habet vel habebit partes. Et cum nulla singularis etas potest maiorari vel minorari, sequitur quod totalis etas sit continue eque magna; cum enim causatur ex adiacencia temporis, patet quod causatur successive ex tempore; quia aliter tempus causaret illam

7. ar *pro* aliter B.8. aŋ *pro* aut B.

12. exm̄ B.

24. w^t B

subito in fine, quin illud tempus non esset. Habito ergo quod etas sit successive magna, patet quod oportet ponere etatem ita proporcionaliter [ad] senem, et non pro illo instanti in quo est quantumlibet iuvenis. Ergo relinquitur quod post, in tempore suo, sit sic senex. Sic ego nunc senior per indivisibile quam prius fui, quia est dare quam senex prius fui, sicut et danda est maxima etas hominis qui nunc deficit esse, et inceptit mecum. Aliter enim non est dare quamdiu viveret vel quamdiu esset vita vel mutacio sua, nec totum cuius forent parciales etates. Non ergo est verum quod aliquid semper non erit per tempus aut per tempora.

Quo ad 2^m dubium, videtur quod non idem tempus sit ubique, hoc est in omni loco; quia in nullo loco est accidens, nisi ubi est suum subiectum; sed non in omni loco est mundus quod est subiectum temporis, sed tantum in uno: ergo non in omni loco est tempus idem in numero.

Item, impossibile est accidens esse unum, nisi pre-supposita unitate subiecti sui; sed mundus non est aliquid unum, ymmo aggregatum ex omnibus creaturis vel vivis ista aggregata: ergo, nec tempus est unum. Maior patet ex hoc quod non est corpus animatum continuum, nec aliquid ens predicamentale, cum tunc haberet animam, et omnia corpora immediata essent continua.

Item, maior pars philosophorum non verterentur in dubium quin quelibet pars mundi potest esse mundus. Ex quo patet quod quotlibet partes mundi sunt eiusdem speciei cum mundo, et per consequens duraciones earum sunt eiusdem speciei. Et sic, duracione mundi existente tempore duracionis suarum parcium, forent tempora. Sic enim essent, posito quod substantia sua esset mundus; et per consequens, cum nullum tempus per accidens sit tempus, sequitur quod sunt tempora.

Item, omnis duracio corporis extenditur, omne tempus est duracio corporis: ergo, omne tempus extenditur. Maior patet ex hoc quod duracio parcium | corporis presupponitur ad duracionem tocuis, tanquam causa; et non extrinseca: igitur intrinseca. Sic ergo totum durans ad eius partes durantes, sic tota duracio ad eius parciales duraciones. Non ergo est ratio quare

A man's age being reckoned thus, old age must come on long after the age of youth, and old age has its comparative and superlative degree.

Whether the same time is everywhere.

Arguments contra.

1. The world is not everywhere, and time is unable to be where the world is not.
2. The world has no unity, it is a mere aggregate; time cannot have more unity than the world.

3. It is doubtful if a part of the world cannot be the world; so each part may be of the same species; therefore the durations of each part are separate times.

4. All duration of a body is extended, and time is the duration of a body.

motus vel aliud accidens extenditur, quin per idem tempus extenditur.

5. If time were the same everywhere, day would be night, autumn, winter and summer would be together. Item, iuxta istam viam, sequitur quod dies sit nox, autumpnus sit ubi estas sit [et] yemps; tempus eciam saluberrimum et pulcherrimum foret turpissimum tem-⁵ pus et pestilencia; et sic de quotlibet denominationibus oppositis temporum. Deduccio patet ex hoc quod idem est tempus in numero apud omnes. Illud ergo quod hic est nox, est allibi dies; et sic de ceteris conclusionibus expositorie inferendis.

10

I reply that the time which is night may be somewhere without its being night there.

Those who dwell at the Poles have one day and one night in the year, of six months each;

Sed hic dicitur quod illa nox est hic, sed non est hic nox. Et ideo dicunt auctores habitantes sub polo habere totum annum pro die naturali, scilicet medietatem anni, sole existente in sex signis propioribus isti polo; et aliam medietatem anni pro nocte, cum sol per¹⁵ aliam medietatem anni erit in aliis sex signis distantioribus ab eodem polo. Et cum orison taliter habitancium sit equinoccialis circulus, patet quod unam medietatem anni habebunt pro die et aliam pro nocte; et alii habebunt diem eternum, sicut habitantes in celo²⁰

and those who live in the frigid zones have in winter days, and in summer nights, of only a few seconds.

extra umbram terre. Alii autem habebunt aliquando instans, vel verius aggregatum ex paucis instantibus pro die artificiali; ut habitantes sub polo zodyaci, sole existente in solsticio yemali, et dum sol fuerit in solsticio estivali, est illis dies fere 24 horarum et nox²⁵ unius instantis vel tempus aggregati ex paucis instantibus.

But I am answered (1): If what is day elsewhere is night here, then day is night; and yet where night is, there is no day.

Contra illam responsionem argumentatur primo sic. Sequitur, *dies alibi est hic nox, et cuiuscunque est tempus alicubi, huiusmodi est: ergo dies est nox*; et tamen, ubicunque est nox, est non dies. Sequitur quod dies³⁰ est non dies. Et per idem sequitur quod quelibet pars diei vel noctis est dies et nox, et per consequens pars non est pars; et sic de aliis oppositis.

And night will be continually pursuing day round the earth, and day likewise. Time would move round the earth, and night and day, which are universals,

Similiter sequitur quod continue fugabit nox diem, et econtra circa terram proporcionaliter, sicut lux solis³⁵ sequitur umbram terre; et econtra. Sed illud videtur loyco derisorium et posticum mendacium, cum tunc tempus moveretur circulariter ad motum solis. Unimo

4. et deest F.

23. *Sub polo 70 lyaci.* Under the pole of the ecliptic. The ecliptic having about 23° of obliquity with the equator, its poles touch the arctic and antarctic circles.

foret tunc nox figurata continua, sicut umbra terre et dies sicut residuum mundi; quod non conveniet multiplicatis. Et conclusio patet, ex hoc quod continue erit eadem nox numero oriencior et quiescenti propinquior. 5 Ergo per eius motum erit. Per idem dormiens in lecto mane, vel fugiens diem versus occidens foret continue propinquior diei; quod non posset esse, nisi propter acceleracionem diei supra fugam suam.

would have a semi-spherical shape.

Similiter videtur quod idem tempus potest augeri et 10 alterari, cum motus celeriter versus occidens haberet diem diucius quam ipso in dando situ quiescente; et cum non continue haberet novam diem et noctem, sequitur quod ille per motum suum prolongaret sibi diem. Et de alteracione temporis videtur planius, cum 15 dies potest serenari et nox obscurari. Annus eciam potest meliorari vel peiorari in fertilitate et bonitate, et sic de multis talibus denominacionibus qualitatibus.

The same time could be increased and changed; a thing moving swiftly towards the West, would have a longer day; and the day may become finer, the night darker, the year more or less plentiful.

Similiter videtur quod ad omnem punctum sub terra sit nox, et per idem omne corpus terreum eclipsans 20 directum aspectum solis ad medium dyaphanum faceret ibi noctem, cum non sit ratio quare mane est vel sero, cespes terre vel aliquid mixtum faceret noctem per eius adumbracionem, quin per illud quodlibet aliud mixtum terreum; sicut patet, ymaginando quod loco

Night would be everywhere underneath the earth; and every earthy body eclipsing the sun, would produce night;

25 terre ponatur quodvis terreum mixtum. Et tunc sequitur | quid quidem ad nutum, per interposicionem manus vel alterius eclipsantis faceret noctem ubicunque fuerit. Ymmo quilibet portaret, tam extrinsecus per pannos vel alia tegumenta eclipsancia, quam intrinsecus, 30 ad omnem punctum noctem suam secum. Et cum dies tam cerebro intercipitur, sequitur quod sunt mille noctes localiter distantes, sicut et dies. Nec valet dicere quod in lapidibus et aliis mixtis opacis nec est dies nec nox, tum quia omne tempus est dies vel nox 35 ubicunque fuerit, vel saltem pars earum, tum eciam quia omne tale mixtum est porrosum, habens corpus dyafanum in eius composicione; et in infinitum in opposito loco potest esse nox adequate, sicut patet de nocte instantanea, que solum est nox in puncto terre 40 supposito polo zodiaci. Sol ergo, respiciens terram,

night would be carried about under the clothes, in the body and the brain.

There would be a thousand different nights and days.

You cannot say that in minerals there is no night and no day; all time is one of the two, and minerals have pores, letting in the light.

It is the sun that causes the

1. figurata B. 2-3. multum B. 12. noun after et B. 20. aspectu B. 28. tamquam B. 34. 17 B.

day by beaming
on the earth:
otherwise every
cloud would
cause night;
and night is
when it
does not
beam; if the
sun failed us,
both day and
night would
fail, or day and
night would be
equivalent to
light and
darkness.

This we admit,
and answer the
foregoing
arguments.

1. It is not
true that
accidents are
only where
their subject is;
relations, v. g.
are multiplied
throughout
their subjects.
But if we say,
as we may,
that the whole
is in each of its
parts, then we
deny that the
world is not
everywhere,
though it may
be said:

The world is in
your mouth,
and you are
in your anus:
for this is a
verbal quibble.

2. The world
must indeed
have a certain
unity,
or it would be
a mere
aggregate of
substances.

As laws unify
a people, so
they do the
world;

and it does not
become other
merely because
of generation
and corruption
here below;

causat illam diem infra illam diem, eo quod aliter que-
libet abombracio per nubem terream causaret noctem.
Et si potest dies remitti usque ad non gradum in cla-
ritate pro medio instanti, non foret ratio quare esset
plus nox quam dies. Sicut ergo hic, tempore in quo ⁵
deficit illustrando, tunc hic est nox; quia aliter, defi-
ciente sole, deficeret tam dies quam nox; vel aliter
quelibet illuminacio causaret diem et quelibet abscuri-
tas indifferenter causaret noctem; sed nunquam in sole,
ubi non potest esse nox, sic dies. ¹⁰

Dicendum quod sic, aliter non esset in celo dies
eterna, suppositis predictis de tempore. Dicitur ad
primum quod assumptum est falsum, cum relaciones et
alii respectus, ymmo qualitates competentes composito
multiplicantur per subiectum; sicut patet de similitu- ¹⁵
dine, de sanitate, de voce, et multis similibus que non
habent partes corpore extensas. Verumtamen equivo-
cando de *esse* in alio, ut docuit Aristoteles, concedi
potest quodlibet totum esse in qualibet eius parte, ut
causatum in sua causa, et non ut locatum in suo loco. ²⁰
Et tunc neganda esset minor, cum mundus sit in omni
loco, non dimensionaliter, sed causaliter. Et si derisorie
inferatur quod *mundus sit in ore tuo*, et *tu totus in ano*
tuo, patet quod leve verbum est et in sententia nichil
movens; sicut nec: *pars mundi est in ore tuo* et *pars* ²⁵
tui est in tuo ano. Nec oportet sentire ibi fetorem, cum
non habens ibi olfactum, nec sicut dimensor abstrac-
tus strictitudine loci, sicut deus qui est ibi.

Ad 2^m dicitur quod oportet ponere mundum habere
quamdam unitatem; vel discretam quantitatem, ut habet ³⁰
populus; vel continuam, ut habet homo. Vel quomodo-
cunque dicatur, mundus non est omnes creature, sed
agregatum ex omnibus substanciis; sicut populus non
est illi homines, sed agregatum ex hominibus conveni-
entibus in pollicia vel ritu. Unde, sicut manet idem ³⁵
populus, quamvis non ultimum singulare manente eadem
pollicia vel lege vivendi, sic manet idem mundus,
manente eodem principe cum lege sua naturali et mul-
titudine naturalium principiorum. Non ergo est novus
mundus propter generacionem vel corrupcionem, corrup- ⁴⁰
torum sublunarium, quia manet idem deus cum suis

legibus et quolibet punctalis materia prima. Et quando auctores dicunt quod totum est sue partes, predicacio materialis est. Sicut enim utuntur auctores predicacione 2^m causam, ut diem dicunt lacionem solis super 5 terram, et illam lacionem vocant porcionem super terram circuli descripti super orisontem: ubi non est
 B 168^b dubium | quin figurative locuntur; ac si dicerent quamlibet creaturam fuisse rationem eternam *esse*: ideo et ipsam rationem esse deum. Sic ergo intelligendo mundum discrete unum, ponit philosophus correspondentem quod genus temporis est numerus, hoc est mensura secundum naturales replicationes instancium, mensurans motum.

for God, and the laws of nature, and primal matter, remain unchanged. The whole is its parts materially, not formally; it is a merely figurative expression. The world being one, Aristotle defines time as the measure of its motion.

Ponendo autem mundum esse animatum, tunc paten- 15 cius est essenciam mundi (quia ipsam animam) esse ubique, sicut dictum est de homine. Et sic tempus est accidens in omni loco, sicut etas hominis est in omni eius parte. Et iuxta istam consideracionem foret duracio vel mora temporis; illa tamen mora est numerus, 20 quia mensura que primo causatur ex numero instancium. Manerent autem adhuc ponendum tres rationes, primo ex hoc quod aliter non esset dare quod mundus est substancia, [sed] acervus alicuius non naturalis. 2^o ex hoc quod mundus, cum sit quoddam totum et finis, gracia 25 cuius constituendi sunt eius partes ordinate, est perfectior quam aliqua eius pars. Cum ergo multe sunt partes mundi animate, et omne animatum sit perfectius quam corpus inanimatum, sequitur quod mundus sit animatus. 3^o ex hoc quod omnem accionem vel 30 perfeccionem quam habet pars integralis habet suum totum; sed pars mundi habet intellectionem, sensationem, vegetativam, sensitivam, et motum ex se; ergo et mundus denominatur eisdem actibus, et per consequens vivit. Et pari evidencia ex se movetur, et celum 35 sic movetur; omnes ergo partes mundi sunt anima regulante, quamvis non proprie vivant, sicut est in minori mundo, cuius superfluitates aliquae non vivunt, nec superfluitates trium digestionum correspondentes in maiori mundo 4 elementis et mixtis inanimatis ex 40 illis completis. Superfluitates vero alie, ut pili, et cornua, correspondent plantis et arboribus; et ossa mineralibus. Sublunarii vero loci correspondent spiritibus;

But it we admit that the world is animated, then its essence (or soul) is much more truly everywhere.

If not, we cannot prove that the world is more than a mere aggregate. It must be, as a whole, more perfect than any of its parts; but some of its parts are animated, therefore, it must be so too. The whole possesses every perfection of its parts; now a part of the world understands, feels, &c. Besides, the world has self-movement. Comparison of the macrocosm with a living body, or microcosm.

At any rate,
the world is
one, and time
is the measure
of its
transmutations.

3. Not
admitting the
possibility of
annihilation,
I do not admit
that a part of
the world can
become the
whole.

And thus no
part is of the
same nature
as the whole.

It is urged:
Time is prior
to any duration
caused by time;
but as each part
causes the
world, each
partial duration
is prior to time

But different
things may be
reciprocally
cause and effect,
in different
ways.

The parts of
the world cause
the whole, as
that of which
it consists;
the whole
causes the
parts, as that
for which they
exist.

So also of
duration.
I leave to
theologians
whether or
not the world

et sic terra attribuitur corpori hominis, aqua sangwini, aër spiritibus et ignis calori. Regio vero capitis correspondet celo, regio pectorum aëri, regio vero intestinorum correspondet aque et regio generativorum, cum posterioribus membris solidis, correspondet terre. Et 5 ut breviter dicatur, quelibet proporcionalia contingit reperire in maiori mundo et minori. Sed quomodo-
cunque sit de ista opinione, satis est quod mundus sit unus, et tempus sit, et numeros ipsum consequens ad mensurandum eius esse transmutabile. 10

Ad 3^m credo quod illud assumptum pro opinabili sit impossibile, cum nichil potest annihilari; quod tamen oportet ad hoc quod pars mundi foret mundus; hoc est, universitas creaturarum. Ideo nulla pars mundi est eiusdem speciei cum ipso; et per consequens cuiuslibet partis mundi duracio potest esse tempus, sed duracio tocius mundi.

Sed obicitur: omne tempus est prius quam quandalitas ab illo causata; ergo, iuxta opinionem, duracio mundi foret prius quam duracio partis mundi. Consequens falsum, cum pars mundi sit causa mundi, et per consequens ipso prior; et per idem, ipsum | *quando* B 169* foret prius tempore, potissime cum potest esse sine mundo; sicut patet in mundi produccione, specialiter de animalibus. 25

Hic dixi, ut sepe alias, quod non obest aliqua reciproce causare se in diversis generibus causandi. Unde partes mundi causant ipsum materialiter; et mundus econtra causat illas partes finaliter; et, cum finis sit causa perfectissima, patet quod in prioritare dignitatis, perfeccionis, et principate intencionis nature, mundus excedit quamlibet eius partem. Et sic se habet duracio ad duracionem. Utrum autem mundus sit in infinitum perfectus per generationem unius suppositi, quod sit deus et homo, componens parcialiter cum 35 mundo, relinquo theologis, qui dicunt istam humanitatem esse tantum finite bonitatis. Sed hoc videtur michi certum, quod manet continue idem mundus, et

4. aqua B. 11. cdo B. 21. gns^m B. 26. d'r dixi B. 28—29. mundus et. 34. perfectum B.

15. *Cuiuslibet*. I think it would be more in agreement with Wyclif's general meaning to put *nullius*.

sic anime continue producantur, cum quolibet anima sit accidens mundo. Correspondenter autem dicitur quod motus in communi est prior naturaliter tempore, et tamen tempus singulare est naturaliter prius quocunque motu singulari; sicut est de quantitate corporis in genere, presupposita ad quantitatem eiusdem corporis corpoream. Et tamen quecumque eius quantitas singularis est posteriori danda quantitate; et ita reperies in multis.

is now of infinite perfection. Each soul that is created is an accident of the world.

Ad 4^m negatur assumptum, sicut patet de duracione hominis que manet eadem corrupto membro, ymmo corrupto toto corpore. Aliter enim non foret periodus animalis continua, sicut vere conceditur esse. Si ergo fuerit res habens partes quibus potest carere, tunc eius duracio omnino non dependet a duracionibus illorum parcium; nec per consequens extenditur, sicut contingit in animali. Et per idem duracio mundi non extenditur. Nec sequitur, si duracio mundi presupponit duracionem dei, que est eternitas, et duracionem anime mundi vel intelligencie, que duracio dicitur evum, et 3^o duracionem materie prime, que est quandalitas, quod ex hinc ille duraciones presupposite sint eius partes; sed bene presupponuntur ut essencie extrinsece, non quo ad situm, sed quo ad essenciam; sicut qualitates prime sunt essencie extrinsece presupposite ad resultacionem qualitatum secundarum. Et sic de aliis multis accidentibus. Est ergo magna ratio quare duracio mundi, que est tempus, non extenditur, et motus mundi extenditur; quia, quotlibet partibus mundi corruptis, foret continua eadem duracio mundi, sed non foret idem totalis motus mundi, corrupta parte mota. Et ideo hinc est quod mundus durat indifferenter ad omnem eius partem, sive motam sive quietam, sed non movetur alicubi, nisi ubi pars eius movetur. Ideo motus mundi dicitur velox vel tardus, uniformis vel difformis quo ad subiectum, sed non quo ad duracionem mundi, cum ipsa non requirit talem duracionem partis mundi sicut motus. Equaliter enim quomodolibet motis et quiescentibus inest duracio.

4. We deny that duration is extended; a man's duration does not change, if he loses a part of his body, or even the whole.

Time implies eternity and the 'æon', it is true, but these are not therefore parts of time.

The reason why the motion of the world is, and its duration is not, extended, is that if part of the world were destroyed, its motion would, but time would not be changed, for duration is the same, whether a body moves fast or slow.

Et si dicatur quod non [est] ratio quare duracio mundi sit tempus, quin per idem et cuiuslibet sue

If it is asked why the duration of the whole world should be time, rather

11. eodem B. 20. omnium? B. 22. sed *pro* quod B. 24—25. ^m q^{tes} B.
39. est *deest* B.

than that of a
part, we reply
that it is
because all
other durations
are accidental,
and that alone
is necessary;
for the others
might not
exist.

Time is thus
the universal,
indivisible and
ubiquitous
duration of all
temporal
things, as life
is the
animation of
the whole
body.

Thus to call
any other
duration time,
is an abuse
of language.

We do not
deny that the
duration of
the simple
points of which
primordial
matter consists,
is extended.

5. Here there
are three points
of view. Either
day and night
are (1) not time,
but the sun's
motion, or (2)
they are made
up of motion
and time, or (3)
they are times.
In the first case
day and night
are nowhere
but in the sun,
and there both
together;
for when we
have day, there
is night at the
Antipodes.
And in the
sky, where
there is always
light, it would
be night for
ever.

partis duracio erit tempus, dicitur [quod] sic. Nam certum
quod tempus est duracio successiva, quia aliter duraret
alia successiva duracione, et tunc accidentaliter suc-
cessive duraret, tanquam accidentaliter quantum. Et
tunc non esset quantitas, sed esset processus in infini- 5
tum in duracionibus. Cum ergo omnis duracio sit
alicuius durantis duracio, patet quod oportet ponere
tempus esse *communem duracionem omnibus temporalibus*,
mole indivisibilem, et ubique. | Sicut ergo vivificacio B 169^b
tocius corporis est vita animalis, et nullius partis vivi- 10
ficacio, sed vita inperfectior alterius rationis, sic eciam
est de duracione mundi et de duracione suarum par-
cium. Unde abutuntur terminis qui vocant quamlibet
quandalitatem vel duracionem partis mundi tempus,
sicut patet ex conclusionibus insequentibus et naturali 15
conceptu quem quilibet habet de tempore.

Et si obicitur quod duracio punctalis materie prime
habet posicionem et extensionem: ergo, duracio com-
posita ex illis habet posicionem et extensionem; dicitur
quod non obest predictis quod duracio mundi, sicut 20
et vita animalis, sit multiplicata, et tamen duracio
prime materie, cum sit alia, sit extensa. Non enim
est pars alterius duracionis, sed ad illam presupposita.

Ad quintum sunt tres modi dicendi. Quidem enim
negant quod dies vel nox aut aliqua pars eorum sit 25
tempus, sed sunt motiones solis. Alii dicunt quod sunt
agregata ex motu et tempore. Et tercii dicunt quod
sunt tempora.

Contra primum modum dicendi patet quod commu-
niter negarent diem vel noctem esse extra solem; et 30
sic impossibile esset diem vel noctem esse in terra.
Sed mocio solis foret continue tam dies quam nox;
quia si nos habemus noctem, que est lacio solis sub
orisonte, per idem antipodes habent diem nostrum pro
nocte, que est lacio solis sub orisonte eorum. Sed quid 35
plus inconsonum quam dicere quod est nox eterna in
celo solum, ubi est maxima claritas? Ista ergo, si com-
parerentur in intelligencia dictis astronomorum in ista
materie, ponerent diem et noctem porcionem circuli solis,
quia illam vocant astronomi motum, et ita ponerent 40
omnem diem vel noctem rem permanentem, et omnem

1. quod deest B. 3. accipit B. 11. enim B. 38. fe qut i i ten B.
39. pcom B.

preteritam vel futuram existentem in hoc instanti; et sic de multis sequentibus ad que sic dicentes non plene advertunt.

Et sic patet quod 2^a posicio habet concedere noctem quamlibet esse diem, cum omnis talis sit ubique ratione sue partis, et sic movetur cum sole, ratione alterius partis, tam dies quam nox, continue.

The second position has also to admit that night is day.

Ideo, videtur michi quod 3^a posicio est melior, quem ponit tempus esse diem et noctem, sed per accidens; et ita evum, seculum, indiccio, lustrum, annus, mensis, septimana, dies, hora, momentum vucam bisse; et sic de ceteris partibus de quibus locuntur tam astrologi quam compotiste, sunt partes temporis, sicut patet discurrenti per dicta autorum et vulgarium. Ista materia bene conceditur; sicut oportet utramque viam predictorum concedere, quod omnis dies est nox, et econtra. Ymmo, stante sole, foret eadem dies in numero quo modo, quia dies eterna, que foret nox eterna, etc. Ergo patet quod lacio solis non est genus ad diem vel ad noctem. Et ita conceduntur aliquę conclusiones sequentes ex illa posicione; notata tamen distincione inter dies artificiales et naturales, et quomodo denominationes predictę insunt temporı, sicut tangitur in responsione sequenti. Nec est inconveniens tales | denominationes inesse eidem pro diversis locis aut diversis temporibus, sed non simul et semel.

I prefer the third view, and say that time is accidentally day or night, or an age, a century, a year, &c.

Both the other views must grant that day is night, and that if the sun stood still, there would be both eternally. We admit many of the above arguments, merely distinguishing between artificial and natural.

Tunc ad primum argumentum contra primam responsionem patet quod assumptum est concedendum, sed maior est neganda. Non enim sequitur: hoc tempus est hic nox, ergo est hic non dies; quia, si hic est non dies, tunc est non dies, et per consequens non est alicubi dies. Ideo bene conceditur tanquam sequens quod *iste dies non est dies alibi*, sed non sequitur *hoc est non dies hic, ergo hoc est non dies*; sicut non sequitur: *hoc non est dies hic; ergo, hoc non est dies*. Conformiter autem dicunt theologi quod Christus est ubique, sed non ubique est ille homo, nec alicubi est non homo, sed alicubi est non homo ibi illud quod non est homo ibi: quod idem est. Sic ergo multe partes diei et noctis sunt tam dies quam nox, secundum

Answer to the attacks on my first reply.

1. (6). We deny that the present time is night here, but grant that what is day here is night elsewhere.

Christ's manhood is not everywhere; it does not follow that the Word is not man.

Many parts of day and night are as much one as the other;

8. quam (!) B. 11. vucā biffe B. 12—13. quam artiste quam gpotifē B.
15. Sicut B. 28. am B.

11. I am quite unable to make anything out of these words, *vucā biffe*.

obliquitatem vel rectitudinem sperere quo ad habitantes
dispariter in orbe terrarum; sicut patet considerantibus
subtiliter istam materiam. Est tamen dare tam diem
quam noctem longissimam, quam etiam brevissimam;
sed non video adhuc quod quolibet pars diei aut noctis
sit tam dies quam nox, cum quolibet instancia nec
sunt dies nec noctes.

or rather
neither the one
nor the other.

7. We deny
that time
moves.

Ad septimum respondetur, negando conclusionem
primo assumptam; quia, cum omne tempus sit im-
mobile localiter sicut mundus, patet quod non competit
ipsi circulacio. Ymmo, si mundus moveretur motu
recto, adhuc foret tempus ubicunque foret situs, sicut
idem tempus esset commune duobus mundis, si essent.
Illi autem qui ponunt lucem fugare tenebram, sicut
canis leporem, intelligunt de speciebus lucis et speci-
ebus tenebrem paulo contraccius, et non de ultimo
singulari. Et sic intelligunt illi qui ponunt tempus ho-
minis, et per consequens eius duracionem, velocius
transire quam aliquod notum sublunarem. Attendunt
enim ad miliaria que punctus equinoctialis describit:
et cum ille motus sit mensura temporis, et sic per
accidens causa eius, dicunt in predicacione 2^m causam
quod tempus tam velociter transit, et per idem etas
hominis. Tales autem predicaciones non admittit logicus,
nisi ex convencionem. Non ergo sequitur quod nox sit
figurata, quamvis multiplicetur per situm figuratam;
quia tunc deus esset spericus, sicut mundus et anima
figurata sicut homo; et sic de aliis multiplicatis.

Those who say
that light
pursues
darkness,

or that the
duration of
man is most
transient,
attend only to
the number
of miles
described by
the equinoctial
point, which
measures time
and predicate
the effect for
the cause.

Night, though
existent
throughout a
space that has
a shape, has
no shape.

Night and day
are everywhere,
but not
artificially; the
former only in
the earth or its
shadow; the
latter
everywhere
else.

Night may be
nearer and
nearer to a
fixed point, but
it does not
properly
approach it;
the cause of
night only
approaches.

Nox ergo et dies sunt ubique, quamvis non ubique
sicut nox et dies artificialis. Nullibi enim est nox, nisi
in terra vel oppaco terreo, aut eius umbra; et per
residuum mundi est dies. Et sic expansius est dies quam
nox, quamvis nox sit expansius dies et nox; positivum
namque prestancius est privato. Nec sequitur: *continue
eidem quiescenti erit eadem nox propinquior: ergo, illa
nox movebitur*; sed sufficit quod hoc fiat per motum
alicuius facientis ipsum tempus esse alicubi noctem ubi
prius non fuit nox. Unde nox nulli rei potest appropin-
quare, quamvis potest alicui propinquius esse. Racio
enim diei vel noctis movetur, sed non nox vel dies.

2. orbem (!) B.

7. sunt twice B.

9. a^{am} B.

2/. f^{us} B.

32. exp^{us} B.

33. erit B; *ib.* poit^m B.

34. p^{na} B.

B 170^b Ac si concederetur | quod si deus michi posset esse So I may come
 propinquius homo per assumptionem humanitatis, sine nearer in space
 hoc quod ipse moveatur (quod quidam concedunt posse to God as
 fieri sine hoc quod aliquid moveatur). Unde conceditur Christ, and
 5 de possibili quod continue propinquabo localiter isti yet God is
 homini cui nichil potest appropinquare localiter. Ymmo nearer to me
 iste homo est propinquior michi ad quemlibet punctum than any man
 mei quam aliquis alius homo potest esse. Et tamen can be.
 movebor continue versus illum hominem a quo disto
 10 per quantumlibet spacium. Videtur tamen melius con-
 cedere quod ille *propinquius* est homo quam fuit, quam
 concedere quod iste homo est homo *propinquior* quam
 fuit. Non enim est propinquior res quam fuit; et tamen,
 ut est homo, est aliquid. Et fere conformiter est dicendum
 15 in terminis accidentalibus de tempore.

Nota tamen quod contingit intelligere istos terminos
 accidentales temporis in suppositione simplici, modo
 quo superius dictum est, et consequenter negare quod
 dies est nox, et sic de aliis temporalibus conclusionibus
 20 concessis in suppositione predicabili. Nec sequitur ad
 sensum illum expositorie: *hoc tempus est dies et hoc*
idem tempus est nox; ergo, dies est nox; sed bene
 sequitur quod illud tempus quod est dies est nox.

Ad 8^m dicitur quod conclusio non sequitur propria
 25 predicacione de eodem tempore in numero; quia motus
 sic versus occidens haberet infinitas noctes et infinitos
 dies, communicantes tamen secundum mutacionem sui
 orisontis. Sed species diei vel noctis potest prolongari
 vel breviri secundum diversa eius individua, et eadem
 30 dies vel nox in numero potest large loquendo, alterari,
 serenari, vel obumbrari, fieri salubris vel obnoxia; non
 quia tempus sit substantia subiecta illis qualitatibus
 vel illis accidentibus, sed quia cum tempore ista con-
 tingunt; ut tempus dicitur amenum illi cui contingit
 35 amenitas in illo tempore.

Ad nonum dicitur [quod], loquendo de die et nocte
 artificiali, contingit varie valde distingwere rationes
 eorum, ut aliqui dicunt ubique esse noctem ut non est
 sensibile lumen solare; et, sole existente in meridie
 40 emisperii nostri, habemus noctem tam inter nos quam
 extra, et [ad] alia puncta habemus simul diem, sed non

We may also
 deny that day
 is night, merely
 admitting that
 the time which
 is day is night.

8. A man
 travelling
 towards the
 west might have
 an infinite
 number of days
 and nights of
 different
 lengths,
 according as
 he changed
 his horizon;
 but this would
 not be properly
 the same
 individual time.

9. We must
 carefully
 distinguish
 the meaning of
 words.
 Some say there
 is night

7. propinquus B. 14. 12^o B. 18. quo ad B. 25. parte pro
 predicacione B. 27. 17 B. 36. quod deest B. 41. ad deest B.

whenever there is no sensible solar light; thus we may have night at midday; thus the moon eclipsing the sun, causes night, and we have day after sunset because of reflected sunbeams. But it is better to admit artificial day to exist whenever the sun, being above the horizon, causes sensible light. Why does an opaque body cause night at dawn or sunset, and not during the day? Because in the second case the sun is above, in the first, below the horizon.

in eodem situ sed ad eundem situm in numero. Et ita luna vel quodlibet aliud umbrosum, eclipsans solem usque ad insensibilitatem luminis, causat ibi noctem; et sic in horis crepuscularibus est dies, sicut est per refleccionem luminis solaris ad obstaculum, sed non 5 per lumen incorporatum in luna vel alio astro. Artificiosius tamen et cercius videtur loqui, ut astronomi locuntur, concedentes ubique terrarum esse diem artificialem ubi sol est super orisontem ibi locati, causans lumen sensibile. Dies enim connotat lucem vel claritatem, 10 nec refert quod corpus oppacum distingwit emisperia inter que orison intercitat, sive fuerit terra sive terreum.

Et si queratur a sic dicentibus quare mixtum in ortu vel occasu solis causat noctem, ubi multum relinquo 15 de lumine, et non eclipsando solem super orisontem, plus tollendo de lumine; potissime cum sol ibi situato tam oritur quam occidit: dicitur quod huius ratio est, quia sol [est] supra orisontem 2ⁱ situati et non super orisontem | primi situati, et hoc sonat dies vel nox B 171^a artificialis de vi vocis.

Et si queratur utrum luna habente lumen proprium, corrupto sole, causaret per suum motum diem et noctem, dicitur quod sic, cum dies et nox maxime constituuntur per luminosum quodcunque fuerit. Et sic potest dici 25 quod illud tempus quod est hic nox foret subito hic dies per annihilacionem solis, mota luna super orisontem, ipsa existente ex se maxime lucida inter luminosa.

Et si queratur utrum habitantes in locis valosis habent noctem quando sol eclipsatur illis per terram, dicitur 30 quod sic, sole existente sub orisonte eorum, et aliter non. Et quod queritur utrum, corrupto sole, foret ubique nox, dicitur quod sic, si nichil supleat vicem solis.

Ulterius concedi potest quod ad omnem punctum 35 mundi est dies vel nox; et sic in quotlibet sitibus. In celo est dies, ubi non est nata naturaliter esse nox. Et infra terram est nox in multis corporibus, infra que non potest esse naturaliter dies; ubicunque tamen est nata esse dies, sicut aliquod est luminosum quod non 40 est natum esse tenebrosum, et econtra aliquod eternum

15. r'linq,' B. 18. tame B; *ib.* quod B. 19. est *deest* B. 25. per *deest* B.

- visivum quod caret aptitudine ad cecitatem. Patet ergo quod ad hoc [quod] hic sit dies, requiritur hic esse tempus in quo sol est supra orisontem huius situs. De aliis vero partibus temporis ut 4 temporibus anni 5 et aliis de quibus locuntur compotiste, oportet diligenter advertere quomodo causantur secundum denominationes accidentales, connotando extra rationem temporis, et quomodo iniciantur et equivocantur; et iuxta hoc respondere, ut patet exemplariter ex predictis.
- 10 Quo ad dubium tercium, videtur quod, cessante omni motu sensibili, non foret tempus, quia omne tempus requirit prius et posterius in motu, sed solum in motu sensibili sunt prius et posterius; ergo solum in motu sensibili potest fundari tempus; igitur. Maior patet, ex 15 hoc quod si tempus posset diffiniri per prius et posterius in seipso, tunc posset idem diffiniri per se vel per suum posterius; et tunc tempus posset habere prius et posterius ex se sine motu; quo dato non est fingendum quid tempus dicit ultra esse rei.
- 20 Item, pono quod non sit motus sensibilis. et ymaginetur homo de tempore; tunc patet quod esset tempus, quia aliter non esset ymaginatio diuturna gignitiva fastidii. Et quod non oportet ex hinc ponere motum, videtur ex hoc quod stat ymaginativam terminari con- 25 tinue ad idem simulacrum pro eadem re, sine generatione nove speciei vel nova terminacione actus ymaginandi. Et sic non potius foret ymaginatio successiva quam est visio vel quivis alius respectus, cum successio requirit diversitatem materie motus.
- 30 Item, si possibile est omnem partem mundi privari motu locali, possibile est omnem partem mundi quiescere similiter a motu. Pono ergo hoc, et sequitur ex quiete tempus esse, cum aliter non esset quies illa longa. Stat ergo tempus esse sine motu similiter. Nisi enim 35 quies temporis esset temporanea, sequitur quod tempus immediate precedens illam quietem, et tempus immediate subsequens illam quietem ex inceptiōe motus, essent vere continuata ad instans quietis (et per consequens
- Day is thus the time when the sun is above a given horizon.
- What has already been said will suffice to give a notion of the difficulties that surround the other parts of time.
- Whether movement implies time.
- (1) Where there is no movement at all, there would be no time, for time requires a *Before* and an *Afterwards*, which is found only in movement.
- (2) On the other hand, let us suppose that there is no movement, and that a man sets to fancying time: there would be time by the very fact.
- (3) As each part of the world can be deprived of local movement, it can rest from movement; suppose that done, and the world must rest in time, or the rest would not have any duration.

2. quod deest B. 5 gpotiſte B. 19—20. ygine^{re} lio B. 25. gaconeB
32. pō B; *ib.* fct ex twice B. 33. lō^a B.

19. *Item.* The preceding argument proves that time depends on movement; those which follow go to prove the contrary.

continue), esset tempus, ex hoc quod continue esset instans et non continue motus.

(4) The slowest movement would be the quickest; for, supposing that the first mobile stops, and that the hand of a clock of one foot diameter goes round in one day; the First Mobile would move one point every instant; so there must be infinite rests, or the hand would describe as much space as the First Mobile.
(5) The world might not have been moved immediately after its creation; yet time began with the creation of the world, and its rest being a successive state, would have been measured by time.

Answers.
We say that time implies some sort of sensible movement; for intellectual movement and even certain sensible attractions do not imply a *Before* and an *After*.

Item, contingit quantumlibet tarde motum esse velocissime | motum, cum quelibet pars mundi potest B 171^b quiescere, mota alia. Posito ergo quod orilogium cuius 5 dyiameter sit pedalis, volvatur semel per tantum temporis quanta est dies naturalis. Et sequitur ex predictis de individualibus quod erunt infinite intercisiones in revolutione A, sicut essent circumducto celo cum A; quia aliter essent tot puncta in circumferencia A, sicut 10 in circumferencia mundi sunt. Cum moveretur ergo per omnes istas penes istas moras intercidentes, non esset motus, quia nichil A vel pars eius. Sequitur quod tempus potest esse sine motu; et per idem quantumlibet magnum tempus. 15

Item, possibile est quod mundus creatus per quantumlibet tempus similiter quievisset et post motus fuisset; ergo tempus non requirit talem motum. Assumptum patet ex hoc quod quies est de se successiva, sicut motus, ut prius dictum est; ergo, si est quies, est 20 tempus. Aliter enim posset quies nunc esse permanens et alias successiva; quod est impossibile, cum aquirerem per totum novas partes in successione, et nichil quod fuit permanens foret pars quietis successive. Et casus de quiete tocius foret multis patenter possibilis, cum 25 quies sit perfeccio rei gracia cuius est motus. Et in signum huius, perfectissima mundi quiescunt continue.

Ad illud dubium respondetur, concedendo quod [si] non sit motus sensibilis exterius vel interius, tunc non est tempus. Ideo, sicut necesse est tempus esse, sic 30 necesse est motum sensibilem esse. Unde, non in quocunque motu fundantur prius et posterius successiva, sicut patet de motu intelligencie a deo; et breviter de cuiuscunque substance motu quo tendit in finem suum. Sic enim innititur quelibet particula terre quieti in 35 centrum mundi et omnes substance in deum, tanquam centrum ubilibet multiplicatum; sed in talibus motibus non habebit ymaginacio materiam successive aquisitam vel deperditam, ratione cuius causaretur instans differens a tempore; sed omnis talis motus foret 2^m se totum 40 simul, sicut est de evo et eternitate.

5. orilogium B.

13. m¹ a ul B.

28. si deest B.

41. sic B.

Ex istis patet quod sententia primi argumenti caret calumpnia, eo quod motus intelligencie est principium remotum ad quod non consequitur tempus. Unde ymaginato quod totus mundus cesset a motu sensibili extrinseco perceptibili, lata ymaginacione super prius et posterius, videndum est utrum actus ymaginandi sit permanens; tunc sequitur tempus esse, eo quod ymaginans est pars mundi sensibiliter mota, et per consequens mundus secundum illam partem movetur.

10 Communitur etiam, quando ymaginativa fertur super preterito et futuro in particulari, non est facile hoc fieri, nisi successive, sicut quantumlibet ymaginamur prius tempore unum et posterius tempore aliud. Ex tali autem ymaginacione causatur intencio speciei fixius in

15 ymaginativa, et debilitas vel potencia ymaginantis ex delectacione vel tristicia, et bonitas vel malicia, fortitudo vel fastidium, aut alie huiusmodi qualitates, racione cuius aquisite vel deperdite, saltem secundum intensionem vel remissionem, ex sequitur tempus ad alterationem

20 successivam. Nec est possibile ymaginacionem nostram coniunctam motui mundi secundum dispositionem in qua nunc sumus ferre super tempus in particulari sine

B 172^a successione actus ymaginandi; qui, cum | mundus sit quoddam unum, oportet in eius motu esse unum non

25 motum movens ordinate suas partes; quo cessante movere, cessaret totus ordo illius motus.

Sicut enim in animali ulterius effectus est motus cui proxima est virtus motiva localiter in suis subiectis, ut spiritibus vel calore; et 3^o sunt membra solida, ut

30 musculus, villus, lacertus vel cetera organa, quorum compositionem ista ingrediuntur. 4^a est appetitiva anime movens, imperando virtuti motive corporali; et hanc appetitivam movet apprehensiva convenientis vel nocivi tamquam ultimam, et primum movens ita quod, cessante

35 illo movere, cessaret omnis motus animalis. Sic ymaginandum est in maiori mundo quod est dare motum sublunarium tamquam ultimum effectum cui proxima est vis celestis influxa per lumina diversimode incidencia et 3^o sunt astra celestia cum suis coniunctis orbibus.

40 4^o vero est appetitiva mocionis orbibus, et 5^o finaliter est apprehensiva primi motoris.

(1) The first argument is, therefore, quite conclusive.

If we can suppose the whole world at rest and only imagination active, representing time, we say that imagination moves, and, therefore, the world moves.

When we imagine time in particular, the object and the act change successively.

Nor can it possibly be otherwise.

Comparison of the movements in an animal with those of the macrocosm

18. ite'ffiom B.

23. qui cū B.

27. ali vici⁹ B.

32. hac B

39. 6^{te} B.

40. mocc⁹ (?) B.

In all
movements,
we must come
to a First
Motor,
immovable in
Himself,

moving
spiritual beings
spiritually, and
material things
materially.

But material
movement must
one day cease,
because it is
imperfect.

All generation
and corruption
will then come
to an end.
As in the
microcosm, so
in the
macrocosm,
there are two
sorts of
movements,
one proceeding
from the First
Motor, the
other from the
soul.
Man will one
day be
incorruptible,
and the world
perfect; yet
some of its
parts will still
move, and this
will constitute
time.

Therefore the
case put in (2)
is impossible.
If a man could
imagine
anything
without any
succession of
acts, it would
not be time
but a sort of
æon.

Necesse ergo est quod in motibus ponderosorum et levium, et generaliter in omnibus sublunaribus motibus qui non sunt mobiles ex se moti, sed ab alio, fit motus resolubilis ad omnem motorem mundi ex se moti; quem motorem oportet esse immobilem; et ille generaliter ⁵ movet esse partem mundi in quantum movetur. Sed diversimode movet, insensibilia motu spirituali et sensibilia motu corporali; quia, cessante perfecto ordine movendi in motu sensibili, cessaret motus elementorum mixtorum ab alio. Verumtamen, cum omnis talis motus ¹⁰ sit actus imperfectus, causatus propter ordinem insitum quantitate vel qualitate acquirendum, patet quod oportet talem motum aliquando cessare, et alium spiritualem continuari eternaliter, modo quo philosophi nostri dicunt fore post diem iudicii. Tunc enim non erit aliquod ¹⁵ mixtum, nisi homo vel pars hominis, vel forte astrum. Sed, cessante motu celi, cessabit generacio et corruptio substancie, et omnis materialis alteracio vel motus in quantitate. Sed sicut est in minori mundo, est dare ²⁰ duas manieres motuum, quorum unus est a natura corporea et non alius, reliquus autem est ab anima: sic in maiori mundo est dare duas manieres motuum, quorum unus est sensibilis naturalis, cuius motor celi est principium; alius autem est spiritualis et intencionalis, cuius anima, que est supra omnia corpora, est principium. ²⁵ Manebit ergo tunc homo incorruptibilis, sicut et quilibet pars mundi ultimate perfecta, et mutabitur homo intencionaliter tam a sensibilibus quam ab intelligenciis ^{B 170^b} insensibilibus mutacione successiva; et hoc secundum omnes vires anime. Non ergo est possibile mundum ³⁰ similiter quiescere secundum omnes suas partes; et cum motum successivum in communi consequitur tempus, satis est ad perpetuandum tempus.

Per ista patet ad 2^m argumentum quod casus est impossibilis. Ymmo, posito quod homo fixe ymaginetur ³⁵ sine successione quacunque mundi, sequitur quod non esset tempus sed mensura quedam proporcionalis evitate intelligencie, sine prioritate vel posterioritate in successione, nec generaretur tunc fastidium vel aliud ens predicamentale; nec foret aliud tunc diuturnum, et si ⁴⁰ maneat sic eternaliter, quia cuiuslibet rei duracio foret

7. spūali B. 12. omnem *pro* oportet B. 29. mūōc B. 32. eniti B.

37. *Evitate*. Derived from *evum*.

tota simul, sicut est de eternitate. Nec capit ymaginatio
 nostra infirma talem statum hominis, cum propter
 B 172^b mutabilitatem organi omnem apprehensionem | nostram
 consequitur vel comitatur successio. Unde leve dictum
 5 est ponere quod ymaginans sine successione tempus
 faceret, quia cicius intellectus hoc faceret; et sic tempus
 esset eternum propter eternam intencionem temporis a
 prima causa. Et propter hoc omne ymaginans habet
 suum tempus quod esset duracio sui actus ymaginandi.
 10 Et per idem sine dubio quelibet duracio successiva
 foret tempus.

We cannot
 even conceive
 such a state,
 and it is
 frivolous to say
 that it would
 be time:
 time would in
 that case be
 eternal.

Et si queratur quomodo erit successio in motu post
 diem iudicii, dicitur quod erunt duo genera hominum
 ex opposito locatorum habituatorum et passionatorum,
 15 quorum unum erit in celestibus plene felicitatum, et
 aliud iuxta centrum, plene miserum. Et primi habebunt
 actualiter perpetuo claram noticiam et plenam delecta-
 tionem in primo motore, et post hoc habebunt discursus
 cognoscendi omnes veritates causatas cum quadam
 20 successione, sine diminucione sui gaudii, propter se-
 curitatem sui habitus, excluso fastidio et errore in suo
 discursu. Et breviter omnes vires anime erunt plene
 suis actibus perfectissimis circa sua abstracta maxime
 proporcionata ad ipsas delectandum. Circumstancie vero
 25 actuum sensuum hic in statu corporali, que includunt
 perfeccionem, erunt ibi ablate, et solum illud quod est
 perfectum ibi remanebit; ut nemo generabit ibi, nec
 augmentabitur, nutrietur, percipiet sonum, odorem,
 saporem, vel qualitatem tangibilem per violenciam aut
 30 materialem immutacionem sui organi. Sed organum
 erit ad tantum perfectum quod percipiet armoniam
 sonorosam sine violencia, causantem consequentem
 motum non successivum sed permanentem, qualis erit
 ad omnem punctum celi, dum quelibet eius pars violen-
 35 tacione alterius intelligitur suo ordini situati. Sed talem
 sonum non sufficimus nunc percipere propter peccatum
 inobediencie. Ideo dicimus quod non est talis sonus,
 cum tamen non sit racio quod motus violentus causaret
 sonum, quin multo magis in omni mixtione naturali
 40 causetur ex motu non successivo sonus harmonicus, ut

Of the
 happiness of
 the blessed in
 Heaven.

They will have
 full knowledge
 of and full joy
 in the First
 Motor, and
 will know all
 truths.
 All the powers
 of the soul will
 produce the
 most perfect
 acts.
 There will be
 no generating,
 eating,
 hearing, &c.;

but the organs
 will be so
 perfect that they
 will perceive

sonorous
 harmony
 without the
 need of sound,

14. pa^o nator^o B. 20. dicione B. 32. fancrosam B. 35. intl^r B.
 40. cc^r B.

fragrance
without wanting
to inhale
vapour.

the most
pleasant tastes

and feelings
likewise;

and all as
nothing to the
delights of
the mind and
heart.

Sound is a
state of matter
that acts on
the auditory
faculty;

odour, savour,
and the rest,
are also similar
states.

And the
corresponding
feelings are
states produced
by their
objects in
the senses,
which may
have them
without the
aid of those
objects.
We need not
go into this
question

dicit Boecius. Et eodemmodo olfactu percipietur odor summe proporcionatus, sine fumali evaporacione, cum ipsi sensui subicitur fumus aereus mundissimus, colore igneo temperatissimus; nec movetur hic talis fumus infra nares ad confortandum cerebrum, et tam realiter inmutandum olfactum, nisi propter defectum virtutis. Et conformiter gustus habebit saporem temperatissimum sibi obiectum, cum ibi erit siccum terreum proporcionative mixtum cum humido aqueo et callido igneo movente. Et eodem modo sensus tactus percipiet suum maxime tangibile, et sic erunt omnes sensus interiores et exteriores in summa sue delectabilissime apprehensionis. Sed omnes iste delectaciones erunt raptim exhauste propter delectacionem rationis et voluntatis in suo finali obiecto.

Querendum autem est de circumstanciis et quidditate hic narratorum. Dicitur quod sonus idem est quod sonacio et dispositio secundum quam materiale est immutativum virtutis | auditive. Et sic odor vel odoracio est dispositio mixti aerei secundum quam ipsum est motivum virtutis olefactive. Sapor vel saporositas est dispositio aquei humidi, quam ipsum est immutativum virtutis gustative; et sic de qualitatibus tangibilibus. Et omnes ille qualitates habent certas porciones miscendi elementa secundum athoma vel partes divisibiles, ex quibus resultant non quod sint res que possunt per se esse, sed sunt dispositiones vel potencie mixtarum ad taliter obiective inmutandum. Et eodem modo intenciones vel species in sensibilibus sunt dispositiones illorum, causate ab obiectis secundum quas sensus sunt apprehensivi eorum. Et illas possunt sensus perfecti aquirere, sine immediacione obiectorum vel accione similium specierum per medium. Ymmo, vere loquendo, sensus sunt quodammodo cum obiectis a quibus afficiuntur, et rapiunt vel eliciunt species ab illis quem ad modum specialiolem noscendum, cum non sit multum pertinens huic loco, relinquetur studentibus; capiendum quod tota imperfecio erit subducta, et totum quod erit perfeccionis persone tali possibile remanebit.

1. fume (*very plain*) B; ib. fuali B. 3. fumg B. 11. erit B. 12. i funne B. 18. fona^a B; ib. male, or mole B. 21. humidi aquei humidi B.

Et econtra in gente opposita. Illis enim erit dolor perpetuus sine dissolucione alicuius particule vel virtutis.

Nec obest ignem vel quodcunque horridum naturaliter hominem immutare spiritualiter perpetuo sic punitum;

5 quia dolor non est nisi displicencia de obiecto, vel quia ipsum est presens, sed inproporcionatum appetitui, vel quia ipsum conceptum delectabile deest. Et sic in illis ingeminatur dolor. Quod autem dolenti sic inper-

10 tinens [est] sui dissolucio, patet ex hoc quod stat hominem quantumlibet gaudere in eius dissolucione, et quantumlibet dolore terreri, vel horrere nichilominus eius deperdito. Si ergo queratur quid erit primum mo-

15 vens omnium istorum, dicitur quod prima veritas, prima iusticia et prima causa, que est iam primus motor mundi et cuiuslibet sue partis; sed sicut iam

20 movet motu extrinseco et materiali sensibili, mediante motu celi, ita movebit tunc motu spiritali, mediantibus rationibus iusticie, animas et eorum corpora; et forte movebit localiter tam beatos quam miseros. Rationes autem fundamentales hic dictorum relinquo theologis, sicut et totam materiam ulterius pertractandam, contentatus de hoc quod necesario est semper motus successivus.

Ad 3^m dicitur quod assumptum est impossibile, cum 25 necessarium est beatos, preter noticiam quam habent de deo propter perpetuam unionem, noscere discursive res per motum circuli, primo in deo, 2^o in proprio genere, 2^o reflectendo in deum, ad quem statur ut ad primam et ad ultimam causam, in quo sunt omnes 30 veritates quodammodo resolubiles. Nec est inconveniens delectacioni talem circularem apprehensionem esse successivam; quia non ex eius deperditione deperditur beatitudo essentialis nec erit delectacio successiva.

Verumtamen non claret michi adhuc utrum possibile 173^b est omnem motum localem corporum hominum | cessare, vel necessarium sit aliquod corpus tale moveri localiter tam celeriter sicut movetur aliquis punctus mundi. Quod si sic, foret consequencia assumpta bona, sed antecedens eius impossibile, admitti.

40 Vel illud antecedens potest admitti, tanquam predicacio michi neutra, et negari consequencia; et potest

They will suffer for ever, without losing anything of their body or their faculties. Pain is but the unpleasantness of an object that does not agree with the desire, or that, agreeing, is absent.

Dissolution is here irrelevant to pain; a man may feel joy as well as terror at the thought of dissolution. The cause of these pains is the First Cause, Source of all truth and of all justice. I leave the thorough examination of this matter to theologians.

(3) It is impossible that all movement should cease in the world; for the Blessed have successive knowledge of things; which constitutes movement.

Whether all bodily movement can cease, or must necessarily continue, is not yet clear to me. Different answers, according to cases. We may even admit the

8. i gma^r B. 9. est *deest* B. 10. disso B. 11. dolo^re B.

12. e^o B. 19. bōs B. 26. distr^r fine B. 31. delectacionem B.

38. a^o B. 39. admitti *deest* B. 40—41. pe^o B.

conclusion —
that the world
may rest —
distinguishing
the senses of
the word.
It means,
firstly the
absence of all
movement,
which is
figuratively
called repose,
as opposed to
toil.

Secondly, the
inaction of an
agent that
ceases to
produce
something new.

Thirdly, the
attainment of
an external
end to which
a being tends;
which may
mean that a
creature has
all that towards
which it tends,
or that it still
lacks many
accidental ends,
requisite to its
perfection.

Fourthly, the
duration in
time of a being
that can move,
but does not.

Thus, if we
admit that there
may be no
successive
movement in
the world,
it would follow
that there
would be no
time and,
therefore, no
rest in the 4th
sense; but
there would be
rest in the 3^d.
Therefore rest,
in the 4th sense,
implies
succession.

gracia argumenti admitti consequens possitum, distin-
gwendō de quiete, ut dictum est de motu. Aliquando
enim dicitur quies similiter pro carencia cuiuscunque
motu. Et isto modo dicitur deus anthropologicē quies-
cere in se eternaliter, quia est finis ultimus non potens;
in aliquem extra se ad eius indigenciam tendere. Et
ista quandoque vocatur requies figurative, cum requies
opponitur labori, sicut quies motu. Et illo modo solum
essencia divina potest quiescere. Quandoque autem
dicitur agens quiescere, quando cessat a producone 10
nove nature extra se; et hoc dupliciter; vel secundum
speciem, vel individuum. Agens enim naturaliter, pro
effectu quem non habet, tendit in illum habendum quo
adhuc caret; et quamvis non ut sic movetur, tamen
ut sic agit et accio talis in aliquibus est labor. 3^o di- 15
citur aliquid quiescere, quando ipsum habet suum
finem extrinsecum cui innititur; et taliter quiescit que-
libet particula terre in centro, et omnis creatura in
deo, sed valde dispariter: ut aliqua habent quidquid
appetunt habere; et illa, si fuerint cum hoc rationalia, 20
sunt beata. Aliqua vero carent multis finibus acciden-
talibus requisitis ad eorum perfeccionem. Talis autem
quies non includit de se successionem, nec excludit
motum permanentem qui est nisus vel tendencia in
finem extrinsecum. 4^o modo dicitur aliquid quiescere, 25
quando ipsum durat per tempus per quod caret motu
dando, quo natum est moveri per illud tempus. Et de
ista quiete famosa opposita motui successivo locutum
est prius, quod oportet ipsam esse primo in tempore
tanquam successivum, et dividi in membra eius 2^m 30
divisionem motuum successivorum.

Istis notatis, dicitur quod admissō, gracia argumenti,
nullum motum successivum esse in mundo, sequitur
ex hoc nullum tempus esse, et per consequens nullam
quietem 4^o modo dictam, sed quietem 3^o modo 35
dictam bene contingit intelligere cum necessitatione
motus successivi. Illa tamen quies non esset longa vel
diuturna, cum illam denominacionem habet quies a
tempore. Ex quo sequitur quo talis quies compatitur
secum tempus; ymo sequitur ad esse temporis, nec 40
discontinuat tempora ab invicem. Ideo negandus est

4. antho^{ce} B.7. figa^a tme^{cu} B.

24. visus B.

33. est B.

casus in quo sequitur mundum quiescere per totum
tali quiete sine successione, et ante et post moveri
successive. Nam illud dictum implicaret prioritatem
temporis vel nature illius quietis mundi ad successionem,
5 et econtra; quia intellecta illa quiete mensurata solum
per instans temporis indivisibile, tunc certum est quod
foret instans sine successione; et illa quies inciperet et
desineret esse; et cum illa quies sequitur ad mundum
et ad quamlibet eius partem de quanto innititur vel
10 tendit in deum, patet quod implicat mundum per
totum incipere et desinere esse.

And as the
argument
implies that
such rest would
be prior to
succession, it
must be denied.

B 174^a Illa ergo quies est ante omnem motum successivum
mundi, prioritatem naturali, | sed non post omnem talem
motum mundi, quia non potest esse naturaliter posterior
15 quam successivum. Nullum ergo tempus precedit illam
quietem, cum dicit solam habitudinem que per se con-
sequitur ad rem quiescentem. Et impossibile est quod
sit successivum, nisi dicat formam accidentalem, in-
existenciam alicuius partis ad subiectum. Ideo illa quies
20 non potest esse instantanea, sicut nec mundus potest
pro eodem instanti incipere et desinere esse. Tunc
enim esset, et per consequens tempus. Et ultra sequitur
ex istis porcionem mundi durare successive; et per
consequens non incipere et desinere esse; et ita forte
25 est de qualibet parte subiecta, cum inceptio et desinencia
pro eodem instanti implicat opposita primo inesse
eidem subiecto formaliter pro eodem instanti. Et sic
patet sequi quod quantumlibet forte agens approximatum
pro primo instanti generationis forme substantialis in
30 materia expectabit amplius quam per instans ante-
quam indisposuerit materiam ad illam formam; quia
aliter natura, inducens illam formam, frustra induxisset
illam, et esset impedita a sua induccione, cum agens
naturale contrarium pro instanti induccionis forme
35 ageret eque fortiter ad eius educionem.

Such rest would
be naturally
prior to
successive
movement,
could not be
preceded by
time, and
would be
neither
successive nor
instantaneous,

for the world
could not
begin and end
at the same
instant.

That would
imply that
opposites can
coexist in one
and the same
subject.
And thus no
agent can
produce a form
at the same
instant it ejects
the contrary
from.

Et si obicitur de lineabus, instantibus et infinitis
similibus, quod pro eodem instanti incipiunt et desinunt
esse, dicitur quod non ex sufficienter simili argumen-
tandum est hinc substanciam, *per se esse*, simul in-
40 cipere et desinere esse, quia non requiruntur contrarie
tanquam mutationes in materia ex generatione et

If it be objected
that lines,
instants, &c.,
begin and end
instantaneously,
I reply that the
analogy is not
sufficient to
prove that a
substance can
so do.

corrupeione istorum accidencium, sicut requiritur ad generacionem et corrupeionem per se substancie. Et correspondenter dicitur quod non est possibile quod aliquid pro primo instanti sui *esse* peccet actu illicito, eo quod producens actum elicientem illum produceret 5 et actum. Non ergo foret in potestate elicientis actum illum non elicere, vel non elicuisse illum actum et per consequens rationale esset quod non obligaretur ad denuo eliciendum illum; eo quod decretum esset a lumine obligante illum actum esse vel fuisse, et per 10 consequens non esset in potestate obligante declinasse eleccionem talis actus; quia iam ante *esse* suum, et post. Obligacio ergo precedit tempore actum et contrarium obligacioni. Multa ergo sunt instancia ordinata regimini universi, et per consequens impossibilia [sunt] 15 que communiter admittuntur vel propter ignoranciam vel gracia argumenti.

(4) I cannot find any means to prove that the world moves now faster, now slower; so we may admit that regularity of movement is a necessity. Thus we deny what the argument supposes. If half the points in the world were destroyed, leaving only the circumference intact, the world would be as dense as before, but only half as large; and each diameter, seemingly as long as before, would be only half its present length.

Ad 4^m dicitur quod non est michi facile invenire medium ad probandum quod mundus potest una vice moveri tardius et alia vice velocius. Ideo potest dici 20 quod necessario requiritur ad duracionem mundi successivam eque velox motus, quomodo non potest esse motus velocior, ut prius dictum est. Unde negari potest assumptum in argumento, eo quod oportet mundum 2^m aliquam eius partem esse eque velociter motum sicut 25 aliquid potest moveri, et sicut moto a horelogio modo quo ponitur, sequens est quod mundus moveatur vel motu locali vel motu alteracionis ita velociter sicut potest. Quod si motus alteracionis non potest esse univoce velox cum motu locali (et sic mundus non 30 eque velociter alterari potest sicut movebatur localiter), tunc oportet quod eque velociter moveatur sicut potest. Unde, sicut prius tactum est, corrupta medietate materiarum punctalium mundi, quieta materia lineari in circumferencia mundi, adhuc foret mundus eque 35 densus, ut prius dictum est | , sed non eque magnus, B 174^b sed in 2^{lo} minor. Et ita quilibet dyiameter mundi, posita uniformitate densitatis materie, foret in 2^{lo} brevior, quamvis ymaginacio dicat oppositum.

9. adenuo B.
15. sunt deest B.

10. alue pro a lumine B; ib. obli^{te} B.
25. velo^r B.

11. obli^{te} B.

Correspondenter intelligendum est de A hore-
 logio posito circumduci sine hoc quod aliqua pars
 mundi velociter moveatur; tunc in ea proporcione pluries
 volveretur in tanto tempore quam dies fuit naturalis,
 5 in qua proporcione multitudo punctorum sue circum-
 ferencie exceditur a multitudine punctorum equinoccialis,
 eo quod non est possibile in eodem vel equali tempore
 esse plura instancia quam in quocumque tempore tanto.
 Et per consequens non est possibile motu velocissimo
 10 mundi esse plura indivisibilia aquisita quam quocumque
 motu indivisibili equali. Et patet quod casus positus de
 horelogio, ad intencionem qua ponitur, est impossibilis.
 Ymaginacio autem non capit istam sentenciam; quia
 non ymaginatur in particulari aliquem motum ex hoc
 15 quod ymaginatur successionem temporis. Ideo credit
 quod, quocumque mobili vel motu signato, quod staret
 mobile in equali tempore moveri velocius aut tardius
 in quacumque proporcione signanda cum hoc tamen
 quod ipsum sit velocissime motum; quod tamen est
 20 impossibile, sicut in *a simili* dictum est de rarefaccione
 et condensacione, ut quisquam non errans in ymagna-
 cione iudicaret tempus mensurans revolucionem A
 horelogii, subducto quocumque alio motu, esse tam
 diuturnum sicut est tempus mensurans revolucionem
 25 celi. Nec est facile vel possibile nobis in ista disputa-
 cione vere estimari in particulari lacionem temporis,
 nisi ex suppositione uniformitatis motus celi cum suis
 partibus, et ex supposicione quietis terre cum suis
 contentis, et experigencia capta de situacionibus astrorum
 30 per suos radios. Istis enim subductis, iudicaret agitatus
 motu delectabili vel aliunde soporatus, tempus esse
 quantumlibet breve vel insensibile, et contristatus vel
 tediatus quantumlibet parvum tempus esse quantumlibet
 longum. Ideo nullus nisi levi estimacione iudicat quan-
 35 titatem temporis.

As for the hand
of a clock, it
would require
to turn round
as many times
in a day as the
circumference
of the world
is greater than
that of
the clock, in
order for the
velocity to be
equal.

The case is,
therefore,
impossible.

Our
imagination
cannot
comprehend
how it is that
a slow
movement
performed in an
equal time with
a quick one,
measures time
just as well.
One revolution
of the hand of
a clock in
24 hours takes
as much time
as a revolution
of the sky.

We must
suppose the
uniformity of
this movement
and also the
immobility of
the earth:

without these,
a man who
enjoys himself
or sleeps thinks
time short, and
vice versa.

8. pla² B.
29. exp²genca B.

9. moto(?) B.

10. pla² B.

20. assimili B

1—2. *Horelogio*. This word has already been rendered in the side-notes by 'clock'. Although the earliest mention of a clock that I can find is that of Henry Vic or De Wyck, made in 1379 for Charles V. of France, yet the context seems evidently to allude to a hand turning on a dial. Some of the later clepsydrae turned a hand by the dropping of water.

Objection:
There is no
time
without local
movement,
and no first or
last instant to
time.

But time is
long as
movement is
divisible,
according as
change takes
place, and the
instant of
time

corresponds to
the *being*
changed in
movement;
there is a first
instant — the
being changed,
followed

immediately by
a second — the
having been
changed.

When at the
starting point,
the mobile is
already in
movement;
when at the
goal, it rests;
these instants
thus agreeing
in nature with
those which
immediately
follow them.

It may be said:
If there is
movement at
the very
starting point,
it has a
certain velocity
at that starting
point.

Thus no
movement is
possible at the
first instant of
creation.

To answer this,
we say that
velocity,
implying time,
cannot be
predicated of an
instantaneous
movement,
but is that part
of successive
movement,

Et si obiciatur quod tempus, motus, et magnitudo, consecuntur se in divisibilitate, et per consequens nec est tempus sine motu locali, nec est dare primum instans vel ultimum temporis, sicut nec primum *mutare* vel *mutatum* esse motus: hic dicitur, ut prius, quod, si 5 tempus eque indifferenter consequitur motum alterationis sicut motum localem, tunc est dare magnitudinem virtutis vel latitudinis qualitatis, secundum cuius divisibilitatem est motus divisibilis et tempus duiturnum, et 2^m divisibilitatem gradus in tali qualitate est instans 10 temporis et *mutari* motus indivisibile. Et ita semper consecuntur se quo ad divisibilitatem, tempus, motus, et magnitudo. Et ita conceditur quod est dare primum instans *mutari*, precedens per instans *mutatum* esse. Et ultra conceditur quod est dare primum instans 15 motus et temporis, similiter et cuiuscunque successivi est dare primum instans, et ultimum cuiuscunque successivi facti a parte post, quamvis non sit dare ultimum singulariter instans successivi. Et ultra conceditur quod mobile movetur in termino *a quo* et 20 quiescit in termino *ad quem*, cum dispositio instantanea in talibus successivis se tenet cum sequente immediate. Sed utrobique est dare instans immediatum tali, instans in quo mobile quiescit vel movetur.

Et si dicatur quod si est motus in termino *a quo*, 25 tunc certe est velox, | et determinatum est ipsum esse; B 175^a ymmo, tunc non esset possibile aliquid difformiter motum quo ad subiectum simul incipere moveri secundum totum. Ymmo, pro ultimo instanti foret motus completus, et mobile tunc annihilaretur, et mobile 30 tunc inciperet esse; etsi mobile suum immediate post hoc crearetur. Non ergo talis motus potest esse pro instanti sue creacionis, quia tunc posset [esse] sine suo subiecto quantum ad ista et similia, patet ex dictis quod velocitas motus respicit tempus primo; et motus 35 instantaneus non est velox. Sed adhuc indeterminatum est motum illum esse partem motus successivi. Ymmo, pari evidencia qua punctus motus primo instanti motus non pertransiret punctum suppositum, aliud autem per remocionem de presenti. Conceditur ergo quod si unum 40

2. fe 1dñ^{te} B.8—9. dimñ^{tem} B.

18. appo B.

19. fin^r B.

22. tet B.

23. ññ B.

26. detñ B.

33. esse deest B.

38. pp'o B.

- mobile incipiat moveri per posicionem de presenti, et esse, et moveri, unus motus esset (reliquo autem desinente removeri per posicionem de presenti) anterior per instans, et in fine temporis (anichilato uno mobili, 5 desinente esse et moveri per remocionem de presenti) foret unus motus, reliquo diuturnior per instans. Utrobique tamen esset dare cuiuslibet talis motus, tam primum quam ultimum instans, cum sit dare instantia inmediata, et sic, pro instanti pro quo est primum
- 10 *mutare*, apponit agens nisum ad transferendum punctale ultra punctale suppositum; et ista sunt per *mutari* instantaneum, quod non est motus successivus, sed eius pars prima et nuda, nec velox nec tarda, quamvis motus successivus sit secundum istam mutacionem pro
- 15 primo instanti: unde tale *mutari* requirit minimum motum pro instanti proximo esse in alio situ indivisibili, sicut *quietari* requirit punctale pro instanti proximo esse in eodem situ indivisibili. Ideo est impossibile quidquam quiescere vel moveri proprie solum per
- 20 instans. Nec video quomodo *mutari* posset esse instantaneum nisi sua materia foret indivisibilis, non successive aquisibilis, sed subito pro instanti quo mobile est supra illa, et in proximo instanti super indivisibili sibi proximo. Sic enim est dare terminum *a quo*, et ter-
- 25 minum *ad quem*, cum *mutari* respicit futurum, sicut *mutatum esse* respicit preteritum. Non quiescit mobile pro proximo *mutato esse* post motum et non pro ultimo *mutari* proximo precedente. In materia autem de acquisitione situum inmediatorum consequenter secundum
- 30 processum instantaneum deficit ymaginacio nec quia virtus materialis est non potens capere nisi sensibiliter divisibile; [quod] non est instans, vel situs punctalis; et quelibet talia sunt que ratio convincit esse ponenda.
- 35 Ad 5^m dicitur quod assumptum est impossibile, cum quies temporalis coexigit motum successivum; nec dubium quin impossibile sit permanens fieri successivum vel econtra, ut bene tangitur. Quamvis autem de perfeccione rei sit quiescere, et quies sit generaliter finis
- 40 motus, non tamen potest illa perfeccio competere cuicunque, sed mundus potest esse in sua perfeccione cum

since the mobile, during that instant, remains still in the same point of space. Explanation of how the mobile passes from the first point of space to the next;

effort of the motor agent to pass the mobile from one point to the next.

The punctal movement in the first instant is neither slow nor rapid; neither rest nor movement is, therefore, properly instantaneous.

But when we think of a mobile passing from one point to the next, our imagination fails, being a material faculty.

We deny that the world could have been immovable after its creation. Rest is a perfection in general, but a perfection that

10. visum B. 13. mda B. 14—15. pp B. 28. p¹ B. 30. after
nec a very illegible word B. 32. quod deest B. 35. m B.

does not belong to all things; the world could be perfect, and yet move.
 Is it impossible for all men to be happy without successive movement?
 It is now; but if we admit that it was possible when the world began, then, Time would not have been.

hoc quod continue moveatur; nec, posito quod esset plene perfectus quo ad numerum hominum, et cessante omni generacione substancie, foret ornatus in disposicionibus corporis ad eius ultimum, et homines circulariter tenderent in deum modo quo dictum est. Quod si queratur utrum sit impossibile omne individuum rationalis nature felicitari et tendere in deum suum sine motu successivo concomitante, dicitur quod iam hoc modo est impossibile. Sed admitto, gracia argumenti, quod sit possibile pro inicio mundi; et tunc concedo quod non foret tempus; nec vere enunciaretur de aliquo quod ipsum fuit vel erit; sed totum foret esse, sicut est in eternitate; nec scimus loqui secundum istam disposicionem mundi, quia instans incepcionis mundi foret eius tota duracio, non successiva, sed permanens, ut aliquandiu foret mundus tunc, sicut nec semper. Sed amotis omnibus adverbiiis temporis, et mundus est, et permanent sine defectu vel desinicionem alicuius partis sue.

How can the world have begun, since it is to be eternal?
 Its dependency on another and its past non-being infers its non-being in the future.

Sed difficultas est quomodo exponendo mundus eternalis incepit esse. Videtur enim pari evidencia quia mundus desinit esse; quia, sicut est efficienter ab aliquo, et non fuit, ita est efficienter ab alio et non erit. Et si fit, tunc subito fit, et per consequens faccio est subita; et cum nullum subitum potest esse permanens, sequitur quod faccio illa desinit esse. Nam, incipiente tempore, desinit esse; nec tempus ipsam corrumpet. Ergo, subducto tempore, desinet sic esse. Vel, si dicatur quod faccio illa sit eterna, cum necessario deus facit de quanto conservat mundum, loquitur de faccione subita vel incepcone mundi. Et tunc non occurrit michi promptus modus explanandi me in ista materia. Ideo transeo pro presenti, concedens, ut alias, quod necesse est tempus semper esse. Hoc tamen tangit non modicum dubium loycale.

I am not prepared to explain myself on that head now, but merely affirm that time is for ever.

Whether the non-being of the world preceded its being.

Arguments pro.
 1. Creation is the bringing of a creature from pure non-being to

Sed, mundo creato, non esse eius precessit suum esse. Et videtur quod sic, primo, ex hoc quod creacio sit produccio creati de simpliciter non esse ad esse. Aliter enim non haberet creacio terminos a quo et ad quem

7. telliti B. 21. eternaliter B; *ib.* p^o B. 23. effit B. 32. modo; *ib.* et *pro* in B. 31. non tangit non (!) B. 36. processit B.

nec posset bene describi differri ab aliis speciebus motuum, vel a generatione naturali, et a faccione artificiali. Nam [cum] in generatione naturali factum a natura non sit de nichilo, sed ex materia, que est
 5 eadem substantia cum producto; sicut in opere artis humane non sit alia substantia, sed artificiosum per generationem forme artificialis, sicut in opere nature sit compositum naturale per generationem forme substantialis: si ergo creati *non esse* precessit eius *esse*,
 10 sequitur quod creatura nunquam talis aliquando non fuit.

being; one the starting point, the other the goal.

This is the only good definition by which it is distinguished from all other productions and changes.

Item, quidquam deus fecit, eternaliter preordinavit; eternaliter ergo preordinat mundum et eius faccionem. Assumptum patet ex hoc quod aliqua preordinavit, quia aliter tolleretur eius providencia. Et idem est iudicium
 15 de quolibet facto suo, cum nichil potest ignoranter vel improvide facere. Cum ergo non potest esse alicuius nova ordinacio in deo, quin eternaliter ordinavit illud facere, sicut scit illud fore, sequitur quod aliquid fuit factum a deo, preordinacio dei, et cuius *non esse*
 20 fuerit eternaliter. Non enim stat *esse* ordinati cum dei preordinacione; ergo oportet preordinacionem inferre *non esse* illius cuius est preordinacio.

2. Every thing ^{was} preordained by God;

Item, deus fuit eternaliter sciens mundum *esse* creandum, qualiter ratio ydealis mundi non fuisset eternaliter precedens eius *esse*. Vel ergo pro illa mensura
 25 fuit *esse* mundi vel eius *non esse*: si eius *esse*, tunc non fuit creandus, quod est inopinabile, cum deus non potest facere quod non est faciendum. Et consequencia patet, ex hoc quod, si aliquid est, tunc illud non est
 30 faciendum, sed factum. Nisi ergo pro aliqua mensura foret *posse esse* mundi, vel eius futuricio sine eius *esse*, non esset mundus possibilis a principio sue creacionis.

now preordination infers the non-existence of that which is pre-ordained.

3. Before Creation, the world was known by God as to be created. Then there was the non-existence of the world; for it the existence, God could not know it as to be created.

B 176* Et si pro aliqua mensura sit futuricio vel | possibilitas rei sine eius *esse*, tunc est cum eius *non esse*, cum
 35 alterum contradictoriorum concomitatur quodlibet.

In ista materia sic tetigi. Prius, verisimile est logico quod *non esse* mundi nunquam fuit, cum semper fuit *esse* mundi; nec fuit *non esse* mundi formaliter in eternitate; quia tunc esset eternum. Ymmo tamen omne
 40 quod fuit vel erit, est: patet quod *non esse* mundi est,

I think it may be asserted that the non-being of the world never was, and that its being was always; and if its non-being was in

3. cum *deest* B. 14. *After* providencia nid'e B. 32. sui creacio B.
 36. *pūs* B. 39. *ī* B.

eternity, it would have been eternal. Yet its non-being, if it was, could not be otherwise than in eternity; for it never was in time. So I say to the first argument that the proper definition of creation is a making out of nothing, and creation presupposes no starting-point.

To the second, that the futuration of the world was ordained in eternity, i. e. at a period when the world could not be;

this knowledge of God is without the existence of the world in so far as it is eternal; as it corresponds to time, it is simultaneous with its existence. God's preordination precedes what He makes, not in eternity nor time, but in nature: for God preordains a thing to be, not to be in the future. To the third, that *creandus* signifies either to be about to be created, or to be worthy of creation.

et non in tempore, si fuit ante mundum: quod est impossibile, cum deus et omne quod est est in tempore. Ymmo, si pro primo instanti mundi sit verum quod *non esse* mundi fuit, tunc est verum quod deus fuit; quod est inprobatum.

Ad primum dicitur quod creacio est faccio ex nichilo; et quelibet alia faccio est faccio ex aliquo, quia ex materia. Nec est verum quod terminus *a quo* cuiuslibet creati fuit, cum primum creatum in tempore fuit sine termino *a quo*. Sed quodlibet posterius creatum habet terminum *a quo*, hoc est, *non esse* suum precedit in instanti *esse* suum. Nec est logico facile exprimere faccionem mundi, cum semper deficeret in docendo quid sit, quam deus vel potius alia veritas eterna.

Ad 2^m dicitur quod assumptum est impossibile, cum non sit possibile deum preordinasse produccionem prime creature, nisi per instans primum cuius est, futuricio non fuit, nec potencia ante actum (saltem anterioritate temporalis); quamvis forte futuricio mundi, sicut et cuiuscumque alterius rei, sit eterna a parte ante, nec alia est futuricio, cum res fuerit et alia antequam fuerit, et sic futuricio prime creature est eterna, et per consequens in mensura pro qua non potest fore *esse* illius creature; et tanta est sine *esse* illius creature pro illa mensura; sed est continue cum *esse* illius creature in tempore existente. Et ita intelligunt illi qui ponunt quod necessario, si est creatura, tunc *non esse* illius creature eternaliter precedit eius *esse*; hoc est, *fore esse* eius pro aliqua mensura naturali eterna, pro qua non est eius *esse*. Conceditur ergo quod ordinacio dei est instantanea, cum requirit ordinatum, et preordinacio dei precedit, si quidquam facit, non eternaliter, nec tempore imparcialiter, sed naturaliter. Non enim preordinat vel ordinat deus quod primum instans vel prima creacio erit, sed preordinat illud *esse* et non *fore*; quia nec fuit nec erit eius *fore*.

Ad 3^m dicitur quod hoc participium *creandus*, potest connotare futuricionem, vel dignitatem ut creetur vel sit creatus. Ad primum sensum patet quod falsum assumitur. Et in 2^o sensu patet quod mundus iam est

2. dem⁹ before deus B. 4. c'e' B. 11. aliquo (?) B. 14. q, fit q3 B.
20. app^u B. 24. tenta, te^ua; B. 27. est pro esse B. 33. inpa^r B.
39. secundum B.

creandus; hoc est, est dignus esse creatus ex bene placito creantis. Mundus ergo, et non eius futuricio actum, habet rationem ydealem eternam, priorem naturaliter mundo. Et illam rationem nunquam con-

5 mitabatur *non esse* mundi, sed fuit eternaliter sine *esse* mundi pro illa mensura; non cum *esse* mundi pro illa mensura, sed non fuit cum *non esse* mundi.

In the first sense, the world never was *creandus*; in the second, it is *creandus* even now. The ideal of this world was never accompanied by its non-existence, but was merely without its existence. There are innumerable other questions concerning these matters; but I have already strayed too far beyond what I first intended; so I bring this work to a close.

Innumerabilia autem dubia continencia materias hic superficialiter salutatas possent emergere. Sed con-

10 derans quod ultra sensum primum propositum vel capacitatem sepius evagabar, decrevi tempus exigere cum isto tractatu de temporalibus ab anxio scrutinio

B 176^b veritatum huiusmodi | parumper desistere, finem tocius operis quiecius inponendo, etc.

15 Et sic est finis Tercii tractatus Magistri Johannis Wicleff, Doctoris Evangelici, cuius anima habeat eterne visionis iocunditatem. Fideliter correctus, etc.

1. ee⁹ B. 4. mundum B.

17. The editor may perhaps be excused here for saying that he thinks the two last words ought, for truth's sake, to have been omitted.

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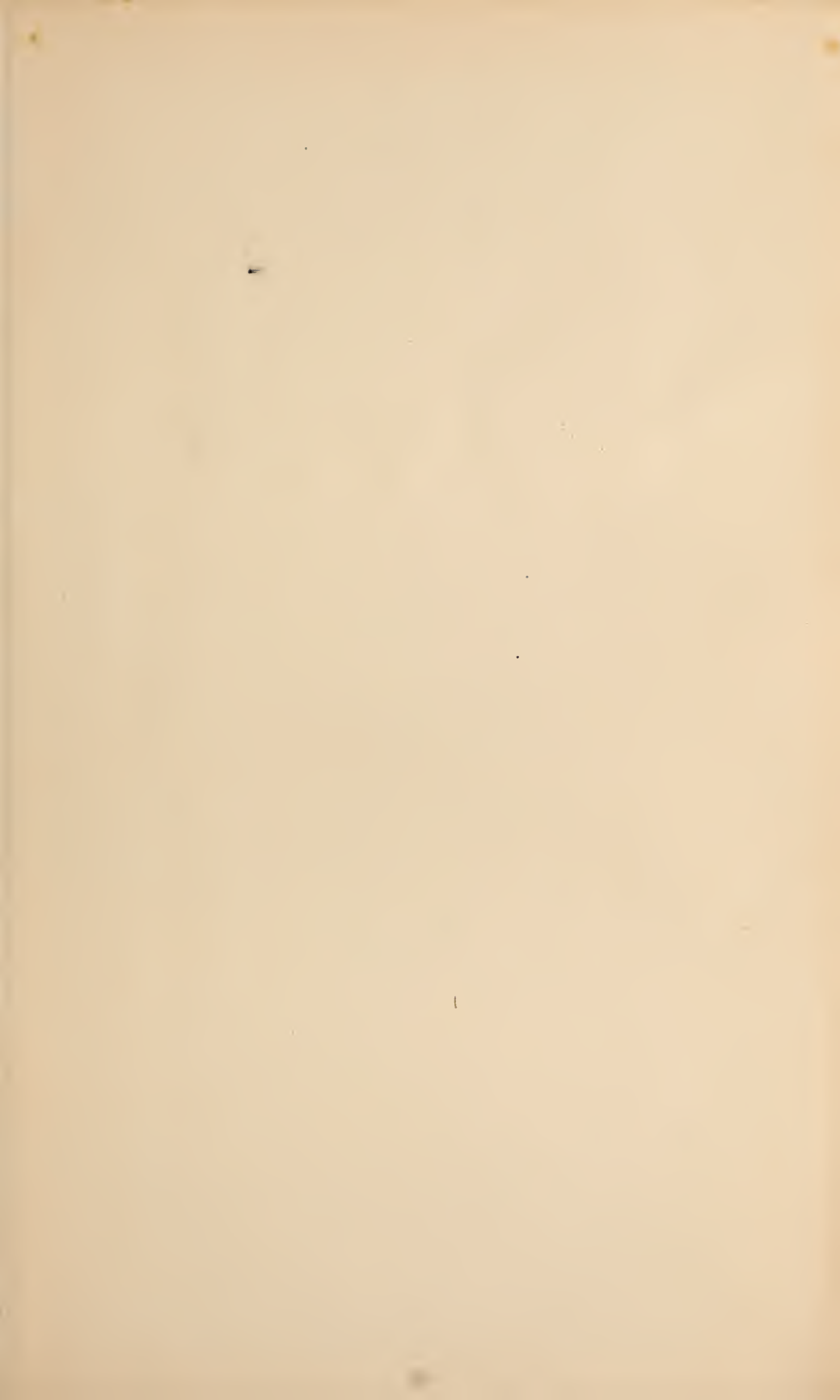
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